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JPRS Report

Environmental Issues

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JPRS-TEN-92-022 17 December 1992

CONTENTS

NEAR EAST/SOUTH ASIA

REGIONAL AFFAIRS

ALGERIA

INDIA

ISRAEL

CENTRAL EURASIA

RUSSIA

UN Debates Post-UNCED Measures

OW0711053792 Beijing XINHUA in English 0503 GMT 7 Nov 92

["News Analysis" by Zhao Renfang: "U.N. Ends General Debate on Environment and Development"]

[Text] United Nations, November 6 (XINHUA)—The 47th session of the U.N. General Assembly today ended its debate, with both consensus and different opinions, on follow-ups to the U.N. Conference on Environment and Development (UNCED).

Altogether nearly 90 speakers, including the U.N. secretary-general, rapporteur-general of UNCED and ministers from many countries, addressed the five-day debate which was originally scheduled for three days.

The speakers all felt the urgency and importance to realize what has been achieved at the UNCED conference held in Rio de Janeiro in June.

Such a mood was reflected when Lakhdar Brahimi, Algerian minister of foreign affairs and rapporteur-general of UNCED, noted that future generations would judge today's world not by the quality of the texts adopted at Rio but by the action taken which would give concrete shape to the decisions of the conference.

On institutions to be established, which including the Commission on Sustainable Development (CSD) for the UNCED follow-ups and the Intergovernmental Negotiating Committee (INC) for the elaboration of an international convention to combat desertification, the delegates in general agreed to have such institutions set up as soon as possible.

Switzerland offered to host the CSD headquarters and Algeria hoped to host the meeting of the Committee on Desertification when it became operational. Spain also offered Seville as the site for the Secretariat of the monitoring body of the convention on biological diversity.

The economic and financial committee has decided to set up an hoc open-ended working group on follow-up to the UNCED.

However, observer here said that one particular important point, which needs particular attention, was the funding of Agenda 21, an major and comprehensive action for environment and development reached at the earth summit.

Just as Chinese Ambassador Li Daoyu said during the debate; "Agenda 21 will remain a mere scrap of paper without adequate financial resources and institutional backup."

According to the agenda, the developing countries will need a "new and additional" annual resources of 125 billion dollars from the developed countries to carry out the programs on the agenda.

During the debate, many developing countries kept calling for financial resources and technology transfer from the international community in helping them in implementing Agenda 21.

The developing nations urged the developed countries to make pledges at the Rio meeting realized by honoring their commitment to contribute 0.7 percent of their gross national product (GNP) official development assistance (ODA) towards development programs.

Brazilian Foreign Minister Fernando H. Cardoso noted that no significant movement in terms of financial resources had been perceived during the five months since the Rio conference. He criticized that in the post-UNCED period, the issue of the environment had become somewhat less evident in the agenda of meetings of developed countries.

During the debate, only few countries made clear commitment as far as resources and technology transfer were concerned.

The Netherlands, explicitly said that the country has decided to add another 0.1 percent designed for the abatement of global environmental problems in the developing world, provided that other governments of industrialized nations took similar steps.

Britain, on behalf of the European Community, stressed the community's determination to fulfill its commitments towards developing countries in the field of sustainable development and to increasing funding for Agenda 21 to about 3.1 billion dollars, including new and additional resources.

Japan, Sweden, Norway and some other countries also expressed willingness to support the efforts by developing countries in the field of environment and development.

Analysts said that there might some other ways to fund Agenda 21, but the most important part should come from the international community, particularly the developed world, which was criticized during the debate for the present environmental crisis due to their "unrestrained and unsustainable consumption patterns and lifestyles."

Though the debate was over, the task still remains to be finished. Participants at the current session of the U.N. General Assembly urged the parties concerned to do their best in ensuring the implementation of Agenda 21 with concrete funding plan.

The assembly will adopt, before its closing, the three major strategy documents approved at the earth summit, namely Agenda 21, the Rio declaration and a set of principles for the sustainable management of forests worldwide, in addition to the establishment of CSD and INC.

Iran, Russia To Establish Caspian Sea Research Center

LD1011173392 Tehran IRNA in English 1514 GMT 10 Nov 92

[Text] Sari (Mazandaran), Nov. 10 (IRNA)—A joint research centre for Caspian Sea studies is to be established by the Islamic Republic of Iran and the Russian Federation.

According to Iran's Arsalan Mansuri, an expert on related matters, the main objective of opening the centre is to tackle the problem of the rising waters of the Caspian Sea which have inundated coastal lands. He said other issues to be dealt by the planned centre are the natural resources of the Caspian and its role in international trade exchanges between the littoral states.

Mansuri said an agreement in principle was reached on the above at the second sub-commission of the Tehran-Moscow scientific and technological cooperation held in Tehran November 5-8. The two countries will draft a constitution for the centre which is open for membership to other Caspian countries.

The Caspian, the world's largest inland sea, is hemmed in by the Islamic Republic of Iran, Turkmenistan, Kazakhstan, the Russian Federation and the Azerbaijan Republic.

Venice Meeting Views Implementation of Antarctic Accord

AU1211110092 Rome ANSA in English 1013 GMT 12 Nov 92

[Text] (ANSA) Venice, November 11—The Antarctic agreement first signed in 1959 is not only vital and solid, but has also shown itself capable of producing new developments, said Italian Foreign Minister Emilio Colombo Wednesday.

Speaking at the inaugural session of a meeting here of representatives from the 40 Antarctic Treaty Consultative Committee countries, Colombo said "if, when it was signed in Washington at the end of the 1950s, the Antarctic treaty represented a kind of 'collaborative bet' in an international climate not given to collaboration, then today we can see that the system upon which it was based is not only vital and solid, but also promising from the point of view of future developments."

The treaty system, he went on, "provides a valid model at a time in history when it is clear to all that the great international issues are such that they can only be dealt with in an inter- and trans-national context."

The issues at stake in the Antarctic include food and water resources (the ice floes there contain 68 percent of the world's fresh water), energy resources and environmental pollution, "issues which," said Colombo, "following the example of Antarctic collaboration, can now be dealt with within a more advanced collaboration strategy."

Colombo pointed out that Italy, which joined the Antarctic group in 1981, recently approved a 390 billion lire (289 million dollars) grant for its second five-year Antarctic plan, and said that new projects were on the drawing board or well under way, both by Italian experts alone and in collaboration with those from other nations present on the southern continent.

On the agenda for the consultative committee meeting, which continues here until November 20, are drawing up new rules on tourism in the Antarctic, setting up a permanent treaty secretariat, creating an environmental protection committee, and agreeing on punishments to be meted out on those who damage the delicate Antarctic environment.

The forty Consultative Committee members (26 nations with full voting rights and 14 other treaty signatories) ordinarily take turns hosting the annual conference, according to alphabetical order. This year it should have been India to welcome the participants, but the Indian government bowed out due to financial problems.

As a result, the task fell to Italy which set aside a one-and-a- half billion lire (1.1 million dollar) budget for the task, according to Gerardo Carante, who heads the Italian Foreign Ministry's Cultural Relations Department.

The sessions are being held at the Cini Foundation on the island of San Giorgio in the Venetian lagoon and those present will also review activities being conducted on the Antarctic and how well the treaty is being adhered to.

The countries with established interests in the world's southern continent signed a 50-year agreement in Madrid on October 3, 1991, banning all mining and protecting its seas, flora and fauna against pollution.

But according to environmentalists at the Venice gathering, the mining ban and anti-pollution agreement has not yet been applied by many signatories.

Asoc, an association which brings together 200 environmental groups in 45 countries, criticized many signatories for not having ratified the accord, and Jim Barnes of Friends of the Earth (U.S.) said "it should be pointed out that countries belonging to the treaty have not yet proved themselves able to deal with the fundamental issue of legal responsibilities, coming to a full stop over the trumped-up debate on the false problem of tourism."

According to Cassandra Phillips of the British office of the World Wide Fund for Nature, "the environmental protocol is a practical example of how governments and citizens can work together to protect a common heritage. If it is ratified and applied swiftly, humanity will have proved itself able to save a natural laboratory of immense importance."

KENYA

Green African Party Registered

EA0611101092 Nairobi Kenya Broadcasting Corporation Network in English 0400 GMT 31 Oct 92

[Text] A new political party, Green African Party - GAP - was yesterday duly registered by the government and will be officially launched next Thursday [5 November].

Briefing the press at Chester House, the interim chairman of the party, Mr. Godfrey M'mwereria, said the party would field candidates during the forthcoming elections. The interim chairman also said he would vie for the country's presidency and Tigania parliamentary seat in Meru district. Mr. M'mwereria said Green African Party would concern itself with environmental issues as they are intertwined with political matters.

The chairman, who declined to name the other interim office-bearers, said the party would recruit its members through seminars rather than holding rallies. The party does not have membership cards and is open to all Kenyans.

Mr. M'mwereria, who is an environmentalist and a former lecturer at the Kenyatta University, said the symbol of the Green African Party would be a tree and the color is green.

Ecological Environment Improved Around Beijing

OW2110073992 Beijing XINHUA in English 0714 GMT 21 Oct 92

[Text] Shijiazhuang, October 21 (XINHUA)—China has made great efforts in improving the ecological environment around Beijing, the Chinese capital, through the implementation of a series of projects.

Since the late 1970s, China started six large ecological protection projects for the purpose in an area of 100,000 sq km in neighboring Hebei Province.

The nine-year grassland construction project in Weichang County in the province has been finished. The afforestation project around Beijing, the ecological agricultural project at Bashang, and harnessing of the Yongding, Chaohe and Luanhe Rivers are expected to be completed in the year 2000 or in 2005.

These projects will cost at least 4.8 billion yuan.

According to Ji Yulin, director of the Hebei provincial agricultural development office, the aim is to restore the natural ecological environment of areas around Beijing to the conditions 300 hundred years ago, promote the development of local rural economy and create a better ecological environment for Beijing.

Three hundred years ago the western, northern and eastern parts of Beijing were vast grassland and forests. Kangxi, an emperor of the Qing dynasty (1644-1911), decided to build an imperial hunting ground and a large summer resort in 1681 and 1703 in Chengde northeast to Beijing. Each year with a large number of officials, he would go to Chengde to hunt during summer and autumn seasons.

In 1863 the Qing dynasty opened the hunting ground and recruited people to reclaim land and cultivate crops. As a result the primeval vegetation of the area was destroyed.

Between the 1950s and 1970s, more grassland and forests were turned into farmland because of the growing population and a need for grain production. This lead to severe water and soil errosion, and frequent floods and drought in the western and northern parts of Beijing which restricted the development of the rural economy.

Beijing's urban environment was also affected by the deteriorating ecology. Each year the Yongding and Chaohe Rivers washed 10 million tons of mud and sand into the Guanting and Miyun reservoirs, seriously polluting the water resources of Beijing.

In 1979, an afforestation drive was launched in the northern part of Beijing. This has resulted in the planting of a 900-kilometer long windbreak forest in the western and northern parts of Beijing.

As a result of these efforts, red deer, roe deer, pheasant and hare which had been almost wiped out, have reappeared in the Wuling and Xiaowutai mountains and in the Saihanba and other nature reserves and forest farms.

One million ha of forests and grassland have been planted and they play an important role in guarding against wind and soil erosion around Beijing.

Since 1982, 270 small river gullies covering an area of 10,000 sq km have been transformed after the Yongdinghe, Chaohe and Luanhe Rivers were listed by the state as key water and soil conservation areas.

According to the departments concerned, the water and soil erosion areas at the upper reaches of the three rivers have decreased from 30,000 sq km in the 1970s to the current 15,600 sq km. The amount of mud and sand washed by the Yongding River into the Guanting reservoir has decreased from 12.79 million tons per year in the 1970s to 2.35 million tons in 1990.

The ecological protection projects also promoted the development of the local rural economy. Some rural areas which were hit by poverty as a result of the deteriorating environment are now comparatively well off.

In the 1970s, the per ha grain output of Zhangbei, Longhua and Fengning counties was less than 1,500 kg. However, over the past three years the counties created 20,000 ha of high-yield farmland. The per ha output of wheat and corn reached 3,750 kg and 6,000 kg respectively.

The per capita income of Weichang county's 8,500 households, was 70 yuan in the late 1970s when they planted crops on 30,000 ha. Last year farmers' income climbed to 450 yuan per capita as they transformed farmland again into pastoral areas and began developing animal husbandry.

Thousands of technical personnel now participate in the afforestation projects and guide and help farmers to improve the environment.

In the coming eight years more funds will be injected into the ecological protection projects. The state departments concerned are now revising the original afforestation program. Governments at various levels in Hebei Province are also stipulating implementation methods to ensure the smooth operation of the projects.

Metallurgical Pollution Control Technology Made Compulsory

OW2710094892 Beijing XINHUA in English 0846 GMT 27 Oct 92

[Text] Hefei, October 27 (XINHUA)—The Chinese Hefei Iron and Steel Plant has developed a new way to effectively bring metallurgical pollution under control.

The State Environmental Protection Bureau has listed this new technology as compulsory for metallurgical plants.

The Wuhan Iron and Steel Design Institute and Hefei Iron and Steel Plant joined hands to develop the new technique, which is a several-stage process using water to treat furnace smoke.

The new method, which claims to reduce smoke pollution to zero while recovering all waste water and iron sediment, has brought about 2.6 million yuan (about 470,000 U.S. dollars) in gains annually to the Hefei Iron and Steel Plant.

After being checked by the Ministry of the Metallurgical Industry the new technology was approved by the State Environmental Protection Bureau as the most practical for national environmental protection.

Hong Kong Funded Environmental Enterprise Established

OW3110131092 Beijing XINHUA in English 1256 GMT 31 Oct 92

[Text] Beijing, October 31 (XINHUA)—First overseas-funded environment protection enterprise has been established recently in Beijing.

Fajing Green-Project Company Ltd., funded by the Hong Kong-based Fajing International Development Company Ltd. will carry out a series of construction projects to improve the environment of public places.

The company plans to employ advanced environment protection techniques and up-to-date equipment in the production of new equipment for the disposal of waste materials out of such places as hospitals, harbors, railway stations, airports and chemical plants as well as the equipment for the sterilization of wards in hospitals.

All the equipment is easy to operate and will be entensively used in public places.

Besides the company, the Fajing International Development Company Ltd., has also opened a representative office in Beijing tc extend its businesses to finance, real estate investment and hotels.

Government Urges Post-UNCED Focus on Finances, Institutions

OW0311200692 Beijing XINHUA in English 1938 GMT 3 Nov 92

[Text] United Nations, November 3 (XINHUA)—China today urged the United Nations, in dealing with UNCED [UN Conference on Environment and Development] follow-ups, to concentrate on most important and urgent matters and actions required by Agenda 21 in explicit terms, especially the questions of finance and institution.

Addressing the 47th UN General Assembly as it entered the second day of a three-day debate on follow-ups to the UN Conference on Environment and Development (UNCED), Li Daoyu, Chinese permanent representative to the UN, said, "Without adequate financial resources and institutional backup, Agenda 21 will remain a mere scrap of paper."

Agenda 21, a program of action for achieving sustainable development at global, regional and national levels, is one of the major documents adopted at the UNCED conference, also known as the Earth Summit, held in Rio de Janeiro June.

Another document, the Rio Declaration, expounds the principles the international community should observe in handling the relationship between environment and development.

Li, in his speech, urged developed countries to make initial financial commitments during the current assembly session, as required in Agenda 21, to jumpstart international cooperation on environment and development and increase promptly and drastically their official development assistance to developing countries, including the financial resources of such international financial institutions as international development association and global environment facility.

He noted that the sustainable development commission to be established should "be adequately representative, with the full participation of developing countries; it should establish practical, feasible and effective relations with other relevant agencies and organizations, including world financial bodies." "And its secretariat should be able to render strong support to it," he added.

On the intergovernmental negotiating committee to be set up, Li said it should contain appropriate commitments so as to establish an effective legal framework for the international community in its efforts to help the countries concerned, in particular those in Africa, to over the serious difficulties resulting from desertification to their economic and social development.

Commenting on the Rio Declaration and Agenda 21, Li Daoyu noted that they and other documents embody and give expression to some important principles, which he summed up as the following:

—The people of all the countries have the right to sustainable development;

—Economic development must be integrated with environmental protection;

—While environmental protection is the common task for the entire mankind, the developed countries have greater responsibility;

—Developing countries' special conditions and needs should be given full attention; and

—Strengthening international cooperation must be based on respect for state sovereignty.

The principles reflected a "new consensus the international community has reached on the question that concerns the common interests of the whole mankind, and mark welcome progress the long stalled North-South dialogue has made in the important area of environment and development." the Chinese ambassador added.

He said, the Rio conference, which proposed to forge a new global partnership for sustainable development, has shown the way forward for mankind to attain common and enduring prosperity, and laid a foundation for the international community's future cooperation in the field of environment and development.

However, the Chinese diplomat pointed out that it is but a starting point for what will be a long process. There is a long way to go from the convergence on principles to reaping the fruits of cooperation.

Regarding the UNCED follow-up actions, Li called attention to four questions. That is, understanding the agreements agreed in its entirety and implementing them comprehensively; firmly observing the principle that environmental protection shall constitute an integral part of the development process; a central role of the United Nations in promoting world community's cooperation and adequate consultations aiming for the broadest support before taking actions.

In the follow-up process, "we should not only base our actions on Agenda 21 but also follow the Rio Declaration for guidance," the Chinese representative said, adding that this was the only way that consensus reached in the UNCED process can be genuinely implemented and progress be made.

NPC Committee Ratifies UNCED Biodiversity Convention

OW0711220592 Beijing XINHUA Domestic Service in Chinese 1124 GMT 7 Nov 92

[Decision approved by the National People's Congress Standing Committee on 7 November 1992 on ratification of the "Biodiversity Convention"]

[Text] Beijing, 7 November (XINHUA)—The 28th session of the Seventh National People's Congress Standing Committee has decided to ratify the "Biodiversity Convention" which Premier Li Peng signed in Rio de Janeiro on behalf of the People's Republic of China on 11 June 1992.

NPC Committee Ratifies UN Climate Convention

OW0711222692 Beijing XINHUA Domestic Service in Chinese 1110 GMT 7 Nov 92

[Decision of the National People's Congress Standing Committee on ratification of the "United Nations Framework Convention on Climatic Changes"—approved on 7 November 1992]

[Text] Beijing, 7 November (XINHUA)—The 28th session of the Seventh National People's Congress Standing Committee has decided to ratify the "United Nations Framework Convention on Climatic Changes" which Premier Li Peng signed in Rio de Janeiro on 11 June 1992 on behalf of the People's Republic of China.

Southeastern Provinces Lead in Environmental Protection Efforts

HK0711025792 Hong Kong SOUTH CHINA MORNING POST in English 7 Nov 92 p 4

[Report by Kent Chen]

[Text] Free-wheeling southeastern provinces of China are taking the lead in the country's effort to protect the environment in the course of rapid economic development, according to a senior Chinese official.

The director of the National Environmental Protection Agency, Mr Qu Geping, said in Hong Kong yesterday that China's environmental protection was satisfactory compared with that of other developing countries.

In an interview with the SOUTH CHINA MORNING POST, Mr Qu stressed that China's environmental protection drive would not be compromised by the nationwide fervour for economic take-off.

"Other things might be relaxed under the objective of speeding up reform and the open door, but certainly not environmental protection.:

Mr Qu said that during a recent inspection trip to the eastern province of Jiangsu, he found that the collective sector was playing a leading role in the prevention of industrial pollution.

Township industries were located in industrial villages with a central power supply and industrial waste water processing facilities.

"Therefore, common pollution problems faced by other industrial districts were unseen there," he said.

Mr Qu said the township enterprises attached great importance to the prevention of pollution and local governments also implemented strict regulations.

"They knew that if their economy was to be developed, preventive measures would have to be taken.

"Foreign investors would be hesitant to invest in a heavily polluted area because the cost of cleaning up would be much higher than the cost of prevention."

Mr Qu noted that some southern cities had even started limiting the expansion of high-pollution industries.

"For example, Shunde, in Guangdong, has been witnessing very rapid growth, but the environment has

become better, not worse," he said. "Because it can afford to do without some industries, which could not be followed by some areas.

"In southern provinces, the pace of economic development is faster and people's awareness towards environmental protection is also higher."

Mr Qu said it would be difficult to carry out a comprehensive assessment of pollution in China because of the vastness of the country, but smaller-scale surveys were underway in Guangdong, Shandong and Jiangsu provinces.

"So far, we find the situation in these provinces quite satisfactory," he said.

But he believed that in northern provinces local governments and businessmen might turn a blind eye to pollution problems as they tried desperately to achieve economic targets.

In some inland areas such as Hubei, Shanxi and Henan, the economic situation did not allow the provinces to spend too much money on the improvement of environment.

"When their economies develop to a certain stage, things will improve," Mr Qu said.

He also said that China had dispatched fact-finding delegations to eastern European countries to learn from their experience.

"Their experience reinforced our conviction that we have to get started in protecting our environment before it is too late," he said

REGIONAL AFFAIRS

ASEAN Vows To Counter 'Anti-Tropical' Wood Campaign

BK2110090592 Jakarta SUARA PEMBARUAN in Indonesian 12 Oct 92 pp 1, 16

[Excerpt] Bandung, 12 October—The ASEAN agriculture and forestry ministers will will make efforts to counter an anti-tropical wood campaign launched by developed nations. The ministers deeply regretted the Austrian Government's unilateral action in imposing terms on tropical wood and various related products without prior consultations.

Austria is now labelling tropical wood and its related products entering that country. By this action, the people there will be reluctant to buy ASEAN's major commodity.

Indonesian Agriculture Minister Ir. [academic title] Wardoyo disclosed this to newsmen following the 14th ASEAN ministerial meeting on agriculture and forestry held at the Hotel Horizon in Bandung on Saturday afternoon.

The ministerial meeting took place from 8 to 10 October, while senior ASEAN agriculture officials earlier met at the same hotel from 5 to 7 October. The meeting produced a number of agreements and statements.

The ministers categorically stated that the Austrian Government's unilateral action had cleary violated agreements set at the UN conference on development and environment or more popularly known as the earth summit in Rio de Janeiro, Brazil in June.

The Indonesian Government has not given a firm reaction to Austria's unilateral action, but the Malaysian Government, Wardoyo said, has threatened to take a commensurate retaliatory measure against Austria.

The ASEAN ministers issued legally binding statements asserting their consensus on the conservation and sustainable development of forests, the convention on biological diversification, and Agenda 21.

The ministers also supported Indonesia's desire to have Bogor, West Java as the venue of an international forestry research center. [passage omitted]

South Pacific Island States Sign Fishery Agreement

BK2810062292 Melbourne Radio Australia in English 0500 GMT 28 Oct 92

[Text] A number of island nations attending the South Pacific Commission conference in Suva has signed a new fisheries agreement aimed at preserving tuna stocks in the region.

The agreement aims to preserve stocks of yellow fin and skipjack by limiting the number of purse seine vessels from outside the region allowed access to the central and western Pacific.

The agreement has been signed by Nauru, the Federated State of Micronesia, Kiribati, the Marshall Islands, Palau, Papua New Guinea, Solomon Islands, and Tuvalu.

The director of the South Pacific Forum Fisheries Agency, Sir (Peter Keniloria), said fishing nations, including the United States, South Korea, Japan and Taiwan had to understand that Pacific island nations have the right to control access to these exclusive economic zones.

Burma, Laos, Cambodia Willing To Join CITES

BK3110032692 Bangkok THE NATION in English 31 Oct 92 p A2

[Text] Thailand's wildlife may soon be more protected from illegal trade as yesterday Burma, Laos, and Cambodia announced that they were willing to join the Convention on International Trade in Endangered Species (CITES) of wild fauna and flora at the first Asia regional meeting in Chiang Mai.

This was welcomed as a step forward for wildlife protection in Indochina by the secretary-general of Wildlife Fund in Thailand, Phisit na Patthalung. "This is a huge benefit to us. We have the same wildlife and much the same habitat as our neighbours. Our borders are only hills and canals, if we don't protect the environment of this cluster of countries we lose everything," he said.

With CITES regulations as a common tool, smuggling across the borders should be easier to control, said Phisit.

Currently, the international wildlife trade is second only to the drug trade in terms of income, said Phisit.

Northeast Asian Nations Fail To Agree on Joint Environment Surveys

SK0311050192 Seoul THE KOREA HERALD in English 3 Nov 92 p 2

[Text] Joint environmental surveys in the East and Yellow Seas, planned by five countries in Northeast Asia including South and North Korea under the sponsorship of the UN Environment Program (UNEP), are likely to be delayed for some time as an agreement on details failed to be reached at a meeting in Beijing last week, a Foreign Ministry official said yesterday.

These countries, also including Japan, China and Russia, had been expected to adopt a Northwest Pacific Action Program (NOWPAP) during the five-day meeting in Beijing based on a draft presented by the UNEP Secretariat.

But the adoption has been delayed until the next meeting in Bangkok next July because of some shortages in the draft, he said.

Establishment of a secretariat, which will exclusively deal with the NOWPAP, was also delayed because the participants failed to find appropriate ways of funding, the official said.

These countries agree, in principle, on the necessity of a secretariat and a fund to support programs for environmental protection in seas in the Northwest Pacific but are still reluctant to bear the cost, he said.

They decided to depend on UNEP's financial support for the NOWPAP for some time, the official said.

The Beijing meting was the second conference on the NOWPAP, one of 15 regional environmental protection programs sponsored by UNEP, following one held in Vladivostok, Russia last October.

South Korea, Japan, China and the then-Soviet Union participated in the Vladivostok meeting and decided to carry out environmental surveys in the East and Yellow Seas. The surveys will be the first joint project on environmental matters among the countries in the region.

North Korea did not attend the conference at that time.

The Yellow Sea is between China and the Korean Peninsula, while the East Sea, also called Sea of Japan, is between Korean and Japan.

The ministry official said Russia seems interested in the environmental project in line with its plan to develop Vladivostok as a major port in the East Sea.

Japan, however, is a little passive possibly out of concern bout the financial burden that it may take, the impacts on ongoing normalization talks with North Korea and its disputes with Russia over the Northern islands, the official said.

HONG KONG

WWF Report Predicts Possible Drought, Famine by 2050

HK0411040892 Hong Kong SOUTH CHINA MORNING POST in English 4 Nov 92 p 7

[Report by Kathy Griffin]

[Text] Global warming could cause drought and possibly famine in China, the source of much of Hong Kong's food, by 2050, a new report predicts.

Hong Kong could also be at risk from flooding as sea levels rose. The report recommends building sea-walls around lowlying areas such as the new port and airport reclamations.

Published by the World Wide Fund for Nature (WWF), the report, which includes work by members of the Chinese Academy of Meteorological Sciences, uses the most recent projections on climate change to point to a gloomy outlook for China.

By 2050 about 30 to 40 percent of the country will experience changes in the type of vegetation it supports, with tropical and sub-tropical forest conditions shifting northward and hot desert conditions rising in the west where currently the desert is temperate.

Crop-growing areas will expand but any benefit is expected to be negated by increased evaporation of moisture, making it too dry to grow crops such as rice.

The growing season also is expected to alter, becoming shorter in southern and central China, the mainland's breadbasket. The rapid changes make it unlikely that plants could adapt.

"China will produce less crops. In the central and northern areas, and the southern part, there will be decreased production because of water limitations," Dr. Rik Leemans, one of the authors of the report, said during a brief visit to the territory yesterday.

Famine could result because of the demands of feeding the population—particularly if it grows—and the diminished productivity of the land.

"It looks very difficult for the whole world," he said.

Global warming is caused by the burning of large amounts of fossil fuels, such as coal and oil, which release gases that trap heat in the atmosphere.

World temperatures already have increased this century by about 0.6 degrees Celsius and are projected to rise by between 1.6 degrees and 3.8 degrees by 2100.

Dr. Leemans said China's reliance on coal-fired power for its industrial growth did not bode well for the world climate.

"I think the political and economic powers in China are much greater than the environmental powers, and (greenhouse gas emissions) could accelerate," Dr Leemans said. "China is not taking the problem seriously yet, although it is trying to incorporate this kind of research to see what is going to happen."

The climate change report, which will be released tomorrow, focuses on China but Mr David Melville of WWF-Hong Kong said some of the depressing scenarios could apply to the territory. Food supplies, for instance, could be affected by lower crop yields. "Maybe we could afford to import food from elsewhere but you have to keep in mind that the type of changes experienced in southern China will take place elsewhere as well," he said.

Sea levels could rise as glaciers melted and the higher temperatures expanded the size of the oceans, threatening much of developed Hong Kong which is built on reclaimed land.

Current projections are that sea levels worldwide will rise by 15 to 90 centimetres by 2100, depending on whether action is taken to reduce greenhouse gas emissions.

"Hong Kong has substantial areas built on reclaimed land and sea level rises could impact on that, not only on Chek Lap Kok but the West Kowloon Reclamation and the Central and Western Reclamation—the whole lot," Mr Melville said, adding that seawalls would be needed.

Depleted fresh water supplies would be another problem because increased evaporation would reduce levels.

Mr. Melville said the general outlook could be helped if Hong Kong used water less wastefully and encouraged energy efficiency to reduce fuel-burning.

JAPAN

MITI Supports Idea of Drafting Basic Environment Law

OW2010135392 Tokyo KYODO in English 1330 GMT 20 Oct 92

[Text] Tokyo, Oct. 20 (KYODO)—The Ministry of International Trade and Industry (MITI) has supported moves to draw up a basic environment law as part of efforts to create an environmentally friendly economy and seek international cooperation to preserve the global environment, a senior MITI official said Tuesday.

"We appreciated highly the environment agency's efforts to work out a proposal of the basic environment law," the official said, on condition of anonymity, about a report on environment preservation released by two government advisory panels.

He also stressed the need for making substantial laws to decide specific policies, in addition to the basic law.

In this line, the ministry will continue maintaining its position of seeking balanced measures for environmental protection, efficient energy consumption, and sustainable economic growth, he said.

Panels Submit Report on Basic Environment Law

OW2010115992 Tokyo KYODO in English 1132 GMT 20 Oct 92

[Text] Tokyo, Oct. 20 (KYODO)—Two government advisory panels on Tuesday submitted a report urging the government to create an environment-oriented economy and take the initiative in international cooperation to preserve the global environment, agency officials said.

The two panels are the Central Council for Environment Pollution Control and the Nature Conservation Council, both advising the director general of the Environment Agency.

Their report submitted to the agency chief proposed economic measures including environment taxes and the assessment of environmental impact as ways to bring about a society which gives full consideration to preserving the environment, the officials said.

The report will pave the way for introducing environment taxes and mandating environmental-impact evaluations, they said.

The agency will compile a well-rounded basic environment law based on the report and present the bill to the ordinary Diet session expected to open next January, they said.

In a section on economic measures, the report gave the nod to environment taxes on fossil fuels such as petroleum, while pointing out the necessity of nationwide understanding for their implementation.

As for environmental-impact assessments, the report recommended giving full consideration to the environment in the whole economic process ranging from research and development to the disposal of used products.

The report, however, avoided referring to possible legislation covering such assessments.

On the international front, the report called on the government to pay attention to protection of the environment in providing overseas official development assistance (ODA) to the Third World.

The report also suggested that corporations should exercise their own environmental judgment as they make inroads into foreign markets.

The proposed law aims to wrap up areas not fully regulated by the existing basic law on pollution control and the basic law for natural environment conservation, such as trash and auto emissions.

The new legislation is also designed to cope with such global environmental problems as the destruction of the ozone layer, atmospheric warming and tropical forest destruction.

Meanwhile, lawyers, environmentalists, and labor unionists voiced dissatisfaction with the report, saying it did not concretely refer to the legislation of environmental impact assessments, participation of citizens, and disclosure of information.

The Japan Federation of Bar Associations criticized the report, saying it did not reflect principles adopted at the Rio de Janeiro earth summit in June.

The Rio de Janeiro declaration says humankind has the right to live in accordance with nature and the individual must be given opportunities to take part in policy-making.

The Association of Japan Nature Protection also rapped the report for its vague stance on legislating impact assessments. The group said including such assessments in the law is necessary to solve environmental problems.

Environment Agency Issues Guideline for Endangered Species

OW2310095492 Tokyo KYODO in English 0853 GMT 23 Oct 92

[Text] Tokyo, Oct. 23 (KYODO)—The Environment Agency issued a guideline Friday aimed at protecting rare animals and plants.

The guideline is based on a new law to take effect next April which is designed to protect flora and fauna in imminent danger of extinction.

Under the law, the agency is to designate domestically and internationally scarce wildlife and habitat protection zones.

The guideline will be discussed by related ministries and agencies and the Nature Conservation Council before being officially decided at a cabinet meeting next month, agency officials said.

It would designate as domestically scarce wildlife whose distribution areas are limited and existence in danger because of excessive seizure and collecting.

But it excludes foreign species and species that rarely come to Japan, such as the Japanese stork, and those hard to distinguish, such as ticks and microbes.

The agency plans to include in an endangered species list some 20 species of mammals over five years and more than 40 varieties of birds, the officials said.

Animals on the list include the Iriomote wildcat found on Iriomote Island in Okinawa Prefecture and Blakiston's fish owl.

Until now, Japan's laws on international trade in endangered wildlife species have come under the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).

On internationally scarce wildlife, the guideline proposes to exclude whales from about 524 categories applied by the appendix of CITES, which automatically bans all commercial trade.

In addition to protecting birds and animals, the new law will be the first in Japan to extend protection to insects, fresh-water fish, amphibians, and flowering plants.

Any transaction involving such species for purposes other than scientific would be banned in principle.

The law also imposes tight restrictions on development of designated regions, including forest, marshland, and river habitats of such species.

Offenders would receive a maximum one-year jail sentence or a fine of up to 1 million yen.

White Paper Urges Promotion of Nuclear Energy To Curb Global Warming

OW2310041892 Tokyo KYODO in English 0048 GMT 23 Oct 92

[Text] Tokyo, Oct. 23 (KYODO)—Nuclear power should be promoted for its contribution to reducing emissions of greenhouse gases, the government's 1992 white paper on nuclear energy released Friday said.

The white paper said carbon dioxide and other gases from the burning of fossil fuels such as oil and coal are now known to contribute to global warming as well as giving rise to acid rain.

It said recent summit meetings of the leaders of the Group of Seven industrialized nations (G-7) agreed that nuclear power is "an economical source of energy which can contribute to the diversity of energy resources and a reduction in the emission of greenhouse gases."

At a press briefing on Wednesday, prior to the release of the white paper, Shigeru Maeda, deputy director of the Office of Atomic Energy Policy Research of the Science and Technology Agency, said Japan plans to continue its development of plutonium use in power generation.

Maeda said this is in spite of a drop in the international price of plutonium because of an oversupply caused by the end of the Cold War era and the release of stockpiled plutonium from nuclear warheads in the former Soviet Union.

Maeda said the government's strategy is to proceed with plutonium use to ensure Japan is not subject to fluctuations in the market price and will not suffer from a sudden cutoff in supply by overseas sources.

"If we base ourselves only on the cost perspective argument, this will lead to the wrong conclusion," Maeda said. "If we use plutonium, we can get very many times the energy gained from the initial use of the uranium ore. In addition, it is something which can be done inside Japan, whereas uranium has to be brought in from overseas.

"To maintain our highly sophisticated level of economy, we have a very large energy demand," he said.

The white paper said, however, that Japan has "an international responsibility" as a country promoting the peaceful use of nuclear energy, to contribute to the promotion of measures to stop the spread of nuclear arms.

It said this can be achieved through cooperation with the International Atomic Energy Agency and the U.S. and other advanced nations in Europe.

The white paper also notes that although Japan's long-term nuclear energy program was revised in 1987, the Atomic Energy Commission is again reviewing it in view of "recent changes surrounding the global energy situation."

The white paper said Japan aims to have nuclear power facilities capable of achieving 50.5 million kilowatts of electricity by 2000 and 72.5 million kilowatts by 2010.

It said the nation currently has 42 operating reactors capable of generating 33.4 million kilowatts, 12 more reactors capable of 12.12 million kilowatts under construction, and one reactor capable of 825,000 kilowatts at the preparation stage.

The white paper said a further 4 million kilowatts of capacity will be required by 2000, but did not say how many reactors would be needed.

The paper said Japan is dependent on other countries for more than 80 percent of its energy supply.

Tokyo Extends 93-Billion-Yen Loan Package to Thailand

OW2610083292 Tokyo KYODO in English 0743 GMT 26 Oct 92

[Text] Tokyo, Oct. 26 (KYODO)—Japan will extend 93 billion yen in Official Development Assistance (ODA) loans to Thailand as Japan's 17th yen loan package to the country, the Foreign Ministry announced Monday.

Officials said representatives of the two countries exchanged diplomatic notes relating to the loan package in Bangkok earlier in the day.

The amount of this year's loans is about 10 percent more than last year's 84 billion yen package. The loans will carry a flat 3 percent annual interest rate and will be repayable over 25 years, including a seven-year grace period.

The largest beneficiary of the package, which covers 12 projects, will be the second phase of rehabilitation of the Ramindra-Atnarong Expressway, a major transport artery in Bangkok.

To contribute to Thai Government efforts to alleviate the capital's almost unparalleled traffic congestion, Japan will also be channeling funds to a fresh project to build a new bridge over the Chao Phraya River.

Officials said Japan is especially pleased that this year's package includes a program to promote environmental protection, which is in line with Japan's desire that developing countries make requests for environmentally-oriented assistance in addition to growth-oriented aid.

Under the program, Japanese loans to a public industrial financing corporation will be in turn loaned to private enterprises to purchase equipment designed to cut back on pollution.

Minister Pledges Funds, Personnel for Earth Summit Follow-Up

OW2910091792 Tokyo KYODO in English 0834 GMT 29 Oct 92

[Text] Tokyo, Oct. 29 (KYODO)—Foreign Minister Michio Watanabe told a senior United Nations development official Thursday that Japan is prepared to provide funds and personnel for a follow-up on last June's Rio de Janeiro Earth Summit, a Foreign Ministry official said.

Watanabe made the remark to Ji Chaozhu, UN undersecretary general for economic and social development, who is here to attend an international conference on aid to former Soviet republics.

The UN General Assembly is to discuss establishment of a commission on sustainable development next week to monitor progress on pledges made at the UN Conference on Environment and Development, popularly known as the Earth Summit.

Ji urged Japan to exercise leadership in helping developing countries implement industrial policies to foster market economies, the official said.

In the future, development will be essential to maintaining peace and stability, Ji was quoted as saying.

He said Japan was particularly well-suited to the role as a bridge between developing and industrialized nations because of its "correct policy" after World War II that enabled it to join the ranks of the developed world, the official said.

Ji, a Chinese national, also congratulated Watanabe on the recent successful visit of Emperor Akihito and Empress Michiko to China, the official said.

MITI To Ban Exports of CFCs

OW0911125792 Tokyo KYODO in English 1235 GMT 9 Nov 92

[Text] Tokyo, Nov. 9 (KYODO)—The Ministry of International Trade and Industry (MITI) announced Monday it will prohibit the export of ozone-depleting chemicals to nations which have not yet signed an international pact banning their use.

The Montreal Protocol Pact calls for a complete end of production and consumption of ozone-depleting chlorofluorocarbons (CFCs) and halons by the year 2000.

Thirty-one countries, including the United States and European countries, signed the pact in June 1990, the officials said.

Japan exports more than 10,000 tons of CFCs per year, more than 10 percent of domestic production, they said.

Since many Japanese companies operating in Southeast Asia use CFCs for washing electronic parts like semiconductors, the ban may have some impact on such nations and areas as South Korea, Taiwan and Malaysia, industry sources said.

The ministry expects its export ban will help reduce consumption of CFCs worldwide since most of the affected countries do not have CFC production facilities of their own, the officials said.

Japan has decided to phase out production and consumption of CFCs by the end of 1995, earlier than provided in the pact, they said.

SOUTH KOREA

Environment Ministry Decides To Expedite Eco-Mark System

SK3110035292 Seoul THE KOREA TIMES in English 31 Oct 92 p 3

[Text] The Environment Ministry yesterday organized a public hearing on the expansion of the eco-mark system for environmentally-friendly products and decided to accelerate the process of issuing the recognition.

The hearing, held at the National Institute of Environmental Research, was attended by No Chae-sik, chairman of the Eco-Mark Committee and 12 consumer experts.

The experts held discussion on expanding the issuance of the eco-mark, adopted last June, on 17 items including cloth diapers, decayable plastics and pollution-free detergent.

The eco-mark is now carried on 66 products manufactured by 23 companies, most of which are aerosols which do not use CFCs (chlorofluorocarbons) and recycled toilet paper.

Companies which are authorized to use the eco-mark pay a small amount of "royalty" per year, money that is used in programs designed to enhance the rate of recycling as well as other environment-related projects.

The discussants concurred that consumers are increasingly resorting to purchasing products that carry the eco-mark due to their pollution-suppressing effects, raising the need to identify more environmentally-friendly products.

They noted that similar systems in Japan and Germany are having continuously positive effects and agreed to expand the concept on a speedier basis.

The experts also presented a survey on products that carry the eco-mark in countries like the United States and Australia.

For instance, items with the eco-mark in Japan include recycled tires, shower heads that conserve water, solar powered watches and calculators, filters and batteries.

In Germany, it is stationery that cause little waste, non-asbestos brake lining for automobiles, non-chemical insect- repellents and recycled rubber products that are approved for the eco-mark, the experts said.

ROK Offers Funding on Yellow Sea Environmental Study

SK3110061592 Seoul YONHAP in English 0538 GMT 31 Oct 92

[Text] Seoul, Oct. 31 (OANA-YONHAP)—South Korea has proposed conducting anti-pollution studies of the Yellow Sea with North Korea, Japan, China and Russia, and offered to bear the bulk of the cost, Foreign Ministry officials said Saturday.

Seoul proposed a 100,000-U.S.-dollar study at working-level negotiations for the Northwest Pacific Action Plan (NOWPAP) this week, the officials said.

The first conference was in Vladivostok in October last year.

North Korea missed the Vladivostok meeting, but attended the second round of talks in Beijing.

NOWPAP, sponsored by the U.N. Environment Program, would be the first marine environment protection project for the Asian region.

"It may take a while for the project to materialize in a concrete form since Japan and North Korea are rather hesitant," a Ministry official said.

North Korea is reluctant to open up its coastal areas to an outside study team and Japan is hesitant because of the ongoing Tokyo-Pyongyang diplomatic normalization talks, he said.

The five countries will meet for a third round of talks next July in Bangkok.

Environment Ministry Plans To Tighten Pollution Regulations

SK0111063392 Seoul THE KOREA TIMES in English 1 Nov 92 p 3

[Text] The Environment Ministry is planning to tighten air pollution regulations to the level of those in advanced countries amid criticism that the situation here is remaining stagnant.

Observers said the mere strengthening of the maximum allowable limits for various pollutants is simply a formality and does not address the fact that pollution readings frequently violate the existing rules.

In the face of such criticism, the ministry announced yesterday that it was mapping out a plan to make the

related regulations more stringent and enhance its surveillance although the observers quickly pointed out that they are comparatively lax than other countries even in Asia.

Ministry officials said the revision is not only designed to make the regulations tougher but to make them more effective as has been the cases in advanced countries like the United States and Germany.

At present, they said, the presence of dust particles, environmentally known as total suspended particulates, is limited to 150 micrograms per cubic meter per day and 300 micrograms per hour.

Not only are the allowable limits higher than those in advanced countries and that suggested by the World Health Organization (WHO), they are not categorized properly enough to identify the adverse effects.

Under the projected regulations, the permissible limit will be reduced to 50 micrograms per cubic meter per day for TSPs measuring less than 10 micrometers, the officials explained.

Scientific tests in the United States have shown that TSPs that are smaller than 10 micrometers easily get into the human body without being filtered and can caused a wide variety of ailments including respiratory difficulties, they elaborated.

"The system of taking measurements for different sizes of TSPs went into effect in most advanced countries in the middle of the 1980s to maximize the effects," one official noted.

He admitted that the strictness of the regulations that exist now for air pollution is about the same as those practiced in advanced countries in the beginning of the 1970s.

Reports by the ministry submitted to the National Assembly during the recent parliamentary inspections showed that even developing countries like Hong Kong, Singapore and Taiwan have long conformed to the categorical testing system.

In Singapore, the regulation limits the presence of TSPs at 75 micrograms per cubic meter on a yearly basis for general TSPs and 50 micrograms for TSPs measuring less than 10 micrometer.

As for sulfur dioxide, the officials said, the current limit of 0.05 ppm (parts per million) on an yearly basis and 0.15 ppm on a 24-hour basis will be tightened to 0.03 ppm and 0.14 respectively.

Still, the report indicated, even the strengthened regulation is higher than the 0.04 ppm on a 24-hour basis in Japan, 0.10 ppm in Taiwan, and 0.13 ppm in Hong Kong.

The situation is similar for carbon dioxide. The plan calls for the abolition of readings taken every eight hours but the reduction in the 24-hour reading from the current 20 ppm to 15 ppm, considerably higher than the average of 9 ppm in the United States, Hong Kong, Taiwan and Singapore.

Environment Minister Addresses UN General Assembly

SK0311033692 Seoul YONHAP in English 0107 GMT 3 Nov 92

[Text] United Nations, Nov. 2 (OANA-YONHAP)—South Korea called on developed countries Monday to promote transfer of environmental technology to developing nations and urged Non- Governmental Organizations (NGOS) to claim a bigger role in the global environment dialogue.

It expressed full support for the creation of the Commission on Sustainable Development (CSD) to monitor the follow-up of the Rio Declaration and emphasized broad education for successful long-term social development.

Environment Minister Yi Chae-chang, addressing the 47th UN General Assembly, stressed the responsibility of developed countries in environmental protection.

"The effective implementation of Agenda 21 will necessarily require substantial assistance in the form of technology transfers from developed countries," said Yi, recalling the document adopted at the Rio Earth Summit in June.

"Many developing nations, including the Republic of Korea, are facing some difficulties in pursuing environmentally sound development due to the limited availability of environmentally benign technologies," he said.

International bodies like the World Bank and the International Development Association (IDA) should purchase these technologies and provide them on non-commercial terms to developing countries, Yi said.

He said that the international community must focus on summit follow-up actions by creating the CSD, which "should be provided with a strong and detailed mandate, with a membership which reflects due consideration for equitable geographical distribution."

NGOS had separate roles, he said.

"Given their often intimate relationship with the many communities which form the primary foundation for sustainable development, NGOS can contribute much to the global dialogue."

He turned to the importance of education that taps the most valuable resource of each and every country—people.

"Shifting government expenditures to education and other social services must be recognized as the soundest investment for long-term development... Education for

women in particular will reap substantial benefits for society, including lower population growth rates," Yi said.

Korea was trying to reform its industrial structure to make it less energy consuming and less waste producing, the environment minister said.

It would soon ratify the conventions on biodiversity and climate change, he added.

German Official Stresses Environmental Technological Ties

SK0511053592 Seoul THE KOREA HERALD in English 5 Nov 92 p 8

[By staff reporter Kang Sok-chae]

[Text] The German state of No th Rhein-Westphalia [NRW], a leading force in environmental technology, wants to create cooperation between Korean companies and NRW companies, especially in the environmental field, a German official said yesterday.

"We are the leading state in Germany in environmental protection. We have the highest investment and research of both private and public companies in environmental protection," said Hartmut Krebs, deputy minister of the German state's Ministry of Economics and Technology, in an interview.

Approximately 40 percent of all the research in the 1991-1992 period has been invested in our state, he said, adding that "the combination between industrial development and public investment and public R&D is a very successful one."

He said that the government's task is to support structural economic development and to foster investment in those areas where both environmental protection and economic development are assured.

"Top management must believe that investment for environmental protection will be in the long run a good investment for their products," the German said, adding that both private and public sectors have responsibilities for environmental protection.

Krebs arrived here Tuesday to encourage Korean firms to invest in the German state and reciprocal German investments, while strengthening bilateral cooperation in the environmental field.

He delivered a speech at an investment seminar yesterday and is to give a lecture at an environment-related seminar today in Seoul.

"Our state is the center of Korean investment in Europe. With the launching of an integral EC market starting on Jan. 1, 1993, we are sure that there are new economic chances here. For this chance, NRW is the right region for Korean investment," Krebs said.

"We have 50 Korean companies located in our state with Goldstar being the largest and most successful firm," he said. Small- and medium-sized companies have good opportunities in our region because there are high possibilities for cooperation in the mechanical engineering and machine tool fields, the German official said.

NRW, the most densely populated and most powerful German state in terms of economic output, drew some 600 American firms by the end of 1990, 500 firms from Japan and 70 from Taiwan.

He cited as special incentives for foreign investors a package of investment advice and consusltancy free of charge, cheap rent rates, soft loans, low interest rates, special programs of coal and steel, and cash grants of up to 20 percent of investment amounts.

MALAYSIA

Sweden Provides Fund for Environmental Projects

BK0411125992 Kuala Lumpur BERNAMA in English 0935 GMT 4 Nov 92

[Text] Kuala Lumpur, Nov 4 (OANA-BERNAMA)—Sweden is providing a U.S.$15 million Swedish fund, the first credit facility in Malaysia solely earmarked for environmental protection and control activities.

Disbursed through the Malaysian Industrial Development Finance (MIDF), the fund provides soft loans to the manufacturing sector in Malaysia for the acquisition of Swedish machinery and equipment for environmental projects and activities.

MIDF Business Development Manager Zohary Dalip said items with a non-Swedish cost of not more than 25 percent could also be considered for financing.

Speaking at the Swedish companies' agents day seminar organised by the Swedish Embassy and the Swedish Trade Council here Wednesday, he said each loan would be capped at the equivalent of U.S.$5 million.

Financing is up to 75 percent of the cost of machinery and equipment with a fixed rate of five percent a year.

Minister Urges Timber Organization To Include Temperate Nations

BK1211105192 Kuala Lumpur NEW STRAITS TIMES in English 11 Nov 92 p 9

[Text] Kuala Lumpur, Tuesday—The International Tropical Timber Organization (ITTO) should be expanded to include countries producing temperate and boreal timber, Primary Industries Minister Datuk Sri Dr. Lim Keng Yaik said today.

He said the ITTO should be known as the International Timber Organization which would act as a monitoring mechanism for all types of forest.

There is now no monitoring mechanism for temperate and boreal forest management although the tropical forest is monitored by ITTO.

He said Sarawak Chief Minister Tan Sri Abdul Taib Mahmud would raise the matter on behalf of Malaysia at the ITTO annual assembly to be held on November 14 in Japan.

"A recent study by the World Wide Fund for Nature (WWF) has found that clear-felling of temperate forest has caused much damage to the environment.

"Therefore there must be monitoring of all forest management and not just tropical forests and the same goes for eco-labelling," he told reporters at the ground breaking ceremony for a new building at Sekolah Menengah Confucian [Confucian Secondary School] (Private) here.

He also called on local environmentalists to embark on an active programme to look into temperate and boreal forest destruction based on WWF study.

"They should not only invite foreign environmentalists to look at our forest but they should also bring these environmentalists to study the problems faced by temperate and boreal forests."

On the eco-labelling of tropical timber and products by Austria which took effect on September 1 this yera, Dr. Lim said Austria's move was based on biased protectionism and the country was hiding under an environmental issue.

"Why are they only concerned with the destruction of tropical forests? In view of the WWF report, why are they not concerned with the destruction of temperate and boreal forests?

He will meet the special envoy of the Austrian Government, Dr. Peter Jankowitsch, on Friday to discuss the issue.

THAILAND

Status of 1992 Environmental Law Assessed

92WN0787A Bangkok SIAM RAT SAPDA WICHAN in Thai 30 Aug 92-5 Sep 92 pp 19, 20

[Excerpts] [passage omitted] One of Thailand's well-known problems, which is a burning issue elsewhere in the world, too, is the deterioration of its natural resources and environment. [passage omitted]

Anan Panyarachun made an eloquent speech in opening the seminar on "The New Environmental Act." In that speech, he stated:

"This government believes that the environmental problem is a burning problem that requires urgent action. Even though this administration will be in office just a few months, it is my firm intention to take action in order to achieve concrete results in solving the environmental problems. [passage omitted] The previous law had several weaknesses."

One of the weaknesses is that the units involved are responsible only for doing technical work and making recommendations. They do not have the power to take action. The new law has corrected that weakness and strengthened the role of the people, rural development organizations, and business sector in looking after our natural resources.

"This is a very important moment, because this marks the start of a systematic attempt to solve the environmental problems. If this government can actually initiate action, the next government should be able to continue this work."

The Office of the National Environmental Board was established 17 years ago, but it has still not been able to solve the environmental problems. People call this unit a "paper tiger." Professor Phaichit Uathawikun, the minister of science, technology, and the environment (the former Ministry of Science, Technology, and Energy), talked about the basic problems in solving the environmental problems in the past. He said that there are four main problems:

"First, the steps taken have not achieved results. This is the fundamental problem of our system of environmental administration," said Dr. Phaichit. "The weak point is the law. The original law stipulated that the power to take action was to be distributed among various government units. They considered that to be low-priority work. If they didn't have time, they put that aside because that was not their main work."

In that law, the Environmental Board was just an advisory body. It did not have the authority to force people to adhere to the law.

"Thus, the environmental problems remained unsolved. Things remained in letters of response of government units. People have been complaining about some problems for seven years without action being take. The files on these matters are very thick."

The second problem is that the people have not played a role in solving the environmental problems. Third, this problem is one of stipulating a policy and work plan. Environmental activities are scattered. There is no clear direction. There is no policy, and there is no money.

"The final problem has to do with the budget, because solving this problem will require a huge sum of money. The main problem is that there is not enough money. As a result, we can't do the work. Or the money is paid out slowly. If we rely on the national budget alone, there will be many problems in taking action," said Dr. Phaichit.

Thus, the previous experiences of this paper tiger, which has not been able to solve these problems, formed the starting point for drafting the new environmental law before there is nothing left to conserve.

The "1992 National Act to Improve and Conserve the Quality of the Environment" gives the National Environmental Board, the chairman of which is the prime minister, the power to order the units concerned to take specific actions.

"This law stipulates that the Ministry of Science, Technology, and the Environment can assume the powers of other ministries in cases in which they have duties under the law but have failed to act. Thus, the National Environmental Board is the equivalent of a small cabinet," said Dr. Phaichit. He added that "besides this, in emergencies, the prime minister can issue orders to solve various problems, such as closing the forests and ordering salt farms to cease operations. In the past 17 years, that has been done only twice."

Besides this, pollution control zones and environmental quality control areas can be designated.

"This law stipulates that the people are to play a role in solving the problems and protecting the quality of the environment," said Professor Khanung Ruchai, the chairman of board of the Environmental Law Center, about a new point in this new law. "We used to think that this was the responsibility of government units alone. But this problem has become more and more serious, and it is the people who are the first to feel the effects of this."

Thus, besides the fact that Minister Phaichit has called on the people to become aware of the environmental issues and put pressure on politicians to implement a policy to solve these problems, the new law gives the people certain rights in order to protect the environment.

"The people have the right to obtain information about what government officials are doing to protect the environment. Actually, this is a right that they should have had a long time ago, because this is a basic right of the people," said Professor Khanung.

"Besides this, the people are to be paid compensation by the state in cases in which they have suffered losses stemming from the pollution caused by state or state enterprise projects."

Besides this, there are provisions that recognize the position of private organizations in monitoring environmental problems. This is the first time that these organizations have been recognized in the law.

"However, there are many public service organizations. Thus, it is essential that they register with the state so that things can be discussed and so that we can help each other," said Professor Khanung.

As for the role of private development organizations, the law stipulates that they can can provide legal assistance to the people and serve as their representatives in filing charges with the court.

In addition to the fact that the government will give the people the right to receive information and give private development organizations a greater role to play, another new point in this environmental law is that "those who create pollution must be the ones who pay." That is, in cases in which officials announce sources of pollution that must be controlled, such as water and air pollution and shaking, the industries involved must put in control systems and pay a fee for ruining the environment. Besides having to pay compensation to the victim, the entity responsible for the damage must reimburse the government for the costs that it has incurred in eliminating the pollution. [passage omitted]

"Our hope is that once officials have established a fund using public funds, private businesses will take an interest in this, too, because the natural resources in society belong to society. Private businesses should play a role in financial matters, too," said Dr. Phaichit

"The question is, what will the private sector do? The time has come for them to answer, because this is their country. If the environment deteriorates, businesses will fail, too. Will the private sector do anything?"

That is the question posed by Dr. Phaichit concerning the establishment of this fund. [passage omitted]

"As for stipulating environmental quality control zones, initially, we have designated Pathaya and Phuket as emergency zones. During the second phase, this will be expanded from Pathaya to Chonburi and from Phuket to Phangnga and Krabi," said Dr. Phaichit.

Initially, the minister attached to the Environmental Board will designate these two zones as environmental control zones. Following that, all business activities will be prohibited unless authorization has been granted. Prior to granting authorization, studies must be done to see what effects the activities will have on the environment. Local officials, including the provincial governor, must participate in formulating a clear plan to solve the problems. This must be done in cooperation with the public service organizations and business community.

"Why Pathaya and Phuket and not other areas?" asked Dr. Phaichit before someone in the audience could ask this. "First, because both of those areas are important tourist spots. The tourist industry has been affected greatly. If the May crisis is solved but the environment continues to deteriorate, that won't do any good.

"Actually, we gave thought to other places, too, such as the industrial zone in Samut Prakan. And the pollution of the Chaophraya River is an urgent problem. But we chose those two places because we have only three months. If we are to accomplish anything, we must take action based on what can actually be done. Also, both of those places already have the necessary data. Thus, we feel that we can take action within a short period of time."

Taking action in those two provinces will be a pilot project to show that the new law can be beneficial and that it can lead to real action. This will set an example for

the next government so that it can take steps to solve the problems in other areas. [passage omitted]

Thailand Left With 26 Percent Forest Cover

93WN0010B Bangkok MATICHON in Thai 9 Sep 92 p 12

[Excerpt] [passage omitted] Mr. Thiwa Sapphakit, the director general of the Forestry Department, talked with reporters while on an official trip to Songkhla Province. He said that Thailand's forests have been destroyed to the point where only 26 percent of the total land area is still covered by forests. The forests along the Andaman coast have suffered the greatest damage, with only 1 million out of a total of 2 million rai left. It will be very sad for the country's environment if this situation is allowed to continue. [passage omitted]

Northeast Forest, Soil Resource Crisis Examined

93WN0010C Bangkok BAN MUANG in Thai 13 Sep 92 p 19

[Article by Thai Farmers' Bank Technical Staff]

[Excerpts] The northeastern region is one of the country's important economic regions. More than 70 percent of the people there work in the agricultural sector, with most farming activities relying mainly on the weather. Because of the present drought and soil deterioration, with soil deterioration a problem on approximately 54.5 million rai, or approximately 51.66 percent of the region's total area, yields in certain areas are very low. Because of this, people have begun cultivating land in national forest preserves. Today, at least 250,000 families are living and working on approximately 14 million rai of forest preserves. As a result, the forest area has declined to only 14.74 million rai, or approximately 13.97 percent of the region's total area. From the problems that have arisen, it can be seen that the forest and soil resources in the northeast are in a state of crisis, and the problem is just getting worse. Unless something is done to solve the problems, this will affect the country's overall economic structure. [passage omitted]

The fact that farmers have expanded the crop growing area because of the low yields obtained in certain areas stems from the fact that the soil used to grow crops has encountered various problems:

1. Soil quality: A total of 54.54 million rai of land is unsuitable for growing crops. Of this, approximately 14.15 million rai is steep land where the layer of topsoil is very shallow and easily susceptible to erosion. There are 6.24 million rai of sandy soil and 16.35 million rai of laterite and gravel. An important problem is that there are approximately 17.8 million rai of saline soil.

2. Soil erosion: This is a serious problem in highland farming areas. When erosion takes place, soil fertility declines. And because of the erosion, the river channels, dams, and reservoirs used for irrigation become shallower.

Of the problems that have arisen, one of the critical problems today is that of saline soil. Saline soil is a problem on approximately 17.8 million rai divided as follows:

There are approximately 12.6 million rai that are slightly saline. Salt deposits cannot be seen on the surface of the ground, but the salt affects the growth of the crops and reduces crop yields.

There are approximately 3.7 million rai where the salt level is moderate. Salt deposits can be seen on the surface of the ground. In these areas, crop yields are less than half of what they once were. Yields here are not worth the farmers' efforts.

Land in national forest preserves, a problem waiting for a solution:

There are 352 national forest preserves in the northeast. These encompass approximately 34.45 million rai. The latest forest survey conducted by officials in 1989 shows that there are only about 14.74 million rai of forests left, or approximately 13.97 percent of the total area of the northeast. It can be seen that approximately 19.71 percent of the forest area has been put to use. More than 250,000 households have encroached on approximately 14 million rai of forests in order to make a living. The remaining area has been opened and used by officials, such as to build dikes, reservoirs, and roads, for example. It is estimated that by 1991, the forest area in the northeast had declined to approximately 13.72 million rai, or approximately 13 percent of the total land area. It can be seen that in just the past 2 years, after the closing of the forest concessions nationwide in 1989, approximately 1.02 million rai of trees have been cleared in order to make use of the land. Surveys of project forests in the northeast in 1988-1989 showed that the tropical evergreen forests, mountain evergreen forests, mixed forests without teak trees, and shorea obtusa forests were in a crisis situation. There were very few large trees with a circumference of more than 100 cm, with the average being only one such tree per rai.

The government is well-aware of these problems. Concerning the critical state of the forests and the clearing of trees by farmers who want to use the land for agricultural purposes, in 1990, the government launched a program of allocating land to poor farmers in degenerate forest preserves, or "KCK" project as it was called. This project targeted the northeast. This was to be a five-year project (1991-1996) for which 12,080.69 million baht had been allocated. The objectives of the project were to help allocate farm land to farmers, to systematically help develop vocations, to support the production system for agricultural industry, and to provide credit. Besides this, another goal was to improve and preserve the richness of the forests. But in implementing this project, serious conflicts arose between state officials and farmers in the

area, because the state allocated families less than 15 rai of land per family in the 14 million rai of degenerate forest preserves that have been encroached on by approximately 250,000 families. That is a total area of about 3.75 million rai. When this is added to the 1.13 million rai used for public services and public forests, that comes to a total of approximately 4.88 million rai allocated to farmers. The state planned to use the remaining 9.12 million rai to revitalize the forests by having people in the private sector carry on afforestation work, which led to conflicts concerning these land problems. Because of this, this project had to be halted in the middle of 1992. Instead, this was turned into a natural resources conservation program. This program will be carried on in place of the original program, which dealt with problems that are still waiting to be solved.

Looking at the problems discussed above, it can be seen that the terrain in the northeast and the poor quality of the soil there have led to low agricultural yields, with the result that farmers have encroached on forest land to carry on farming activities. But the destruction of the forests has further affected the quality of the soil and just increased the seriousness of this problem. This has led to droughts and soil erosion in steep areas. Urgent steps should be taken to deal with these linked problems. Because if we continue to deal with problems only as they arise, which is the case today, the forest and soil resources in the northeast will face a crisis that will be difficult to deal with, and in the end this will affect our overall economic structure.

IFCT Offers Firms Loan Extensions for Environment

BK0211025792 Bangkok BANGKOK POST in English 2 Nov 92 p 30

[Text] The Industrial Finance Corporation of Thailand (IFCT) is providing four loan extensions carrying low interest for factories to conserve the environment.

The IFCT is encouraging factories to invest in controlling toxic substances stemming from industrial processes.

IFCT's funds total 300 million baht. Each industrial plant can borrow a maximum of 20 million baht for a project, but new plants will be allowed a maximum of only 10 million baht.

The duration of borrowing is seven years, with a suitable grace period provided. The interest rate is 11.5 percent a year.

The plants seeking loans can be newly set-up factories attempting to equip a standard treatment system, and operational factories aiming either to set up or to improve the treatment system to meet standards.

The loans can also be used for waste elimination, recycling, or relocation of factories into industrial estates where joint water treatment system is available.

Government environment conservation fund totals 5,000 million baht. The fund will be proportionately allocated to every part of the country depending on the requirement. Borrowing for each project is averaged at 20 million baht. The maximum amount of loan is left open depending on the project's size.

The interest rate will be 6 percent per annum with seven to ten years borrowing period and two-year grace period. The loan will be available at the beginning of next year.

The Japan Overseas Economic Development Fund (OECF) totals 1,000 million baht. The maximum borrowing amount is 60 million baht for each project. The interest rate is 10.5 percent a year with 10-year borrowing period and two-year grace period.

The World Bank fund totals 275 million baht. The fund will be handed out to purchase machines equipped at petrol stations or plants to reduce the application or leaking of chemical substances which tarnish natural ozone.

ALBANIA

Germany, Albania Try To Resolve Pesticide Shipment Controversy

AU2610194592 Zofingen RILINDJA in Albanian 22 Oct 92 p 8

[H.M. article: "The Albanian Environment Should Not Be Turned Into a Waste Dump"]

[Text] Tirana, 20 October—During September and October the world and Albanian public have been acquainted with two reports by ATA and REUTER concerning a distressing problem. The reports respectively fall under the titles: "Who Brings Useless Pesticides to Albania?" and "Albania Is Full of German Undesirable Pesticides."

Under the label "humanitarian aid," 17 train cars of pesticides arrived from the German firm "Schmitztrekan" at the Baize railway station in March 1992. No one touched them for 15 successive days. They remain completely blocked even today. By the end of September, 23 other cars were sent back without being allowed to enter Albanian territory. This amount of pesticides, about 220 tons, administered by the Foreign Trade Ministry, was to be distributed by Agroeksport to the agricultural supply branches of the agricultural-trade enterprises in Shkoder, Elbasan, Pogradec, Korce, and Kolonje. Three wagons alone have been sent to Shkoder.

The pesticides are unusable, because they are of 1983-1987 production and expired a long time ago. Andreas Ben Stoff, a German toxic waste expert, stresses that their toxicity pollutes environment because they contain mercury and lindane dioxide.

The disposal of these chemicals remains a dangerous task, because no way has been found to send them back to their place of origin. Another reason is the fact that during the long time of its stay in Albania, train cars became the target of looters for its packing, so a considerable part of the goods was damaged. Thus, the economic damage of this eight-month period was added to the ecological one. If we figure that $18 are lost every 24 hours for every car, this amount today has reached the figure of $60,000 and it is increasing with every passing day.

The matter regarding Germany has other aspects. The expired pesticides are exported as toxic waste to France and Romania, where they are also blocked. To export them to developing countries and East Europe, or to eliminate toxic waste, as it is called, you have to pay from 5,000 to 11,000 German marks per ton, which means that possibilities for abuse are many.

Germany is shocked by the possible repercussions to its international relations because of the REUTER report.

The Albanian and German Governments are searching for a way to resolve this concern. International laws state that the culprits should be convicted. This action has been initiated by former Albanian officials at the Ministry of Agriculture, the Albanian embassy in Bonn, and an Albanian private firm, licensed by this ministry to deal with the trade of agricultural chemicals.

These cases of infringement in Albania seriously damage its environment and turn it into a waste dump. Adding the considerable economic damage to this, both of them endanger the nation's path to development and progress. Albanian television reports that this flagrant case of infringement remains an open file that requires a prompt solution.

BULGARIA

Fate of Belene Nuclear Plant Project Still Undecided

AU2010104392 Sofia VECHERNI NOVINI in Bulgarian 14 Oct 92 pp 1, 3

[Boryana Kostova article: "Shilly-Shallying Continues About Fate of Belene Nuclear Power Plant"]

[Text] It is reported that the Filip Dimitrov government is once again going to clarify the fate of the Belene Nuclear Power Plant, and this will probably not be for the last time. Skeptical observers recall that furious, but fruitless, debates on the issue have been held on several occasions in the past. However, at least this is better than doing nothing.

The new development is that Deputy Prime Minister Ilko Eskenazi is reported to have been asked to investigate the problems in greater depth and to give a view on the draft resolution of the Council of Ministers that has been prepared. The contents of this document are almost identical with the proposal made by the Committee on Power Supply published in issue No 14 of DUNAVSKO DELO on 10 April 1992. Paragraph 2 in each of the two mirror-image draft documents proposes making the Belene site a duty-free zone, and this is apparently the stumbling block. According to many informed sources, Finance Minister Ivan Kostov and two or three other ministers do not want to hear a word about setting up such a zone, and their view is sure to prevail.

Georgi Nikolov, National Assembly deputy of the Parliamentary Union for Social Democracy for the town of Svishtov, comments that these disputes omit one very important point. Paragraph 1 of the draft resolution of the Council of Ministers is supposed to read: "Construction of the Belene Nuclear Power Plant is halted." It is evident that unless this issue is finally resolved, no one will make long-term investments in the region of the projected nuclear power plant. It is true that Minute No. 12 of the Council of Ministers session held on 6 February 1992 concerning the delivery of the nuclear reactor shell purchased from Czechoslovakia notes that "the construction of the nuclear reactor at the Belene site is halted." However, by stating this, the Filip Dimitrov

cabinet adopted a decision that had already been made. We will remind our readers that as long ago as on 17 May 1990 the Lukanov cabinet put the project into cold storage, while in its Resolution No. 288 of 28 August 1991 the Council of Ministers headed by Dimitur Popov outlined measures "to overcome the problems arising from halting the construction of the Belene Nuclear Power Plant." Despite this, the plant's future remains unclear.

Some time ago, in response to a question from a National Assembly deputy, Prime Minister Filip Dimitrov stated: "We do not intend to engage in shilly-shallying over the nuclear energy industry...." However, what word other than shilly-shallying can one use to describe the government's stance, which, as stated in a Sofia daily a little less than a month ago, holds that the issue of the Belene Nuclear Power Plant will be settled by 1995-97? We calculate that by then the term of office of the "first democratically elected cabinet" will have expired, so let the next cabinet grapple with the problem.

Interior Ministry Details Plutonium-239 Affair

AU0311060092 Sofia BTA in English 2035 GMT 2 Nov 92

[Text] Sofia, November 2 (BTA)—The radioactive capsules containing plutonium material, seized by the Central Service for Organized Crime Control, do not represent a hazard to public health and to the environment, the Bulgarian Interior Ministry said in a press release this evening. The ministry reacted to an article by Barry Penrose in the November 1, 1992 SUNDAY EXPRESS of London, which says there was an international conspiracy to supply Iraq with weapons-grade plutonium via Sofia.

According to Mr. Penrose, an international gang allegedly smuggled 300 kg of pure plutonium from Russian plants and delivered it to the Iraqi Embassy in Sofia from where the radioactive material was to be taken out of Bulgaria by diplomatic post.

The Interior Ministry said that the law enforcement authorities were alerted on October 29 about a travelling bag containing radioactive substances having been left in the cloakroom of the Sofia Sheraton. Law enforcement officers seized the bag and found that it had been left by one Barry Penrose, British subject who had left Bulgaria on October 28, 1992. His identity was confirmed by the British Embassy in Sofia.

The Central Service for Organized Crime Control obtained a fax message sent by the said Barry Penrose to a personal acquaintance of his, Vili Kavaldzhiev of the Cultural Section of the Union of Democratic Forces, detailing the British journalist's independent investigation and summarizing the story which appeared in the SUNDAY EXPRESS.

Experts of the Central Service for Organized Crime Control found that the 140 radioactive capsules discovered in the bag contained plutonium material superficially implanted into ceramics and placed in a metal holder. The overall content of pure radioactive plutonium in the 140 capsules was up to 0.2 grammes, the Interior Ministry said. The capsules are used in army analysers of chemical warfare agents.

The radioactive capsules were stolen from the Sofia-based Company Electroncommerce on December 25, 1991, and an investigation into the case started back at that time, the Central Service said. The capsules were intended for return to the Russian manufacturing plants because Bulgaria did not need them.

Interior Ministry experts describe as ridiculous Mr. Penrose's allegations that there are 300 kg of plutonium in Bulgaria. It would take large quantities of pure plutonium to make any bomb, while the minimum amount contained in the stolen capsule can only be extracted by a complicated chemical technology and is unusable for nuclear weapons, the ministry emphasizes.

Before the cabinet meeting today Interior Minister Yordan Sokolov told the press that information on the case had been withheld from the media for operational considerations.

BTA today received a letter from the Iraqi Embassy in Sofia categorically denying the Bulgarian mass media reports of the SUNDAY EXPRESS story about a delivery of plutonium to Iraq via Sofia. The publication in the British weekly comes as part of a totally unjustified campaign intended to discredit Bulgarian-Iraqi relations and to carry on the boycott against Iraq, the letter says.

Bulgarian, Romanian Experts Differ on Emission Control Standards

AU0411221792 Sofia BTA in English 1520 GMT 4 Nov 92

[Text] Silistra, November 4 (BTA)—The Romanian standards for the maximum admissible level of harmful substances in the air are different from the Bulgarian ones. That is why the credibility of analyses made by Bulgarian experts has been called into question at the 5th meeting of the Bulgarian-Romanian Commission on Environmental Problems in the Region of Silistra (Bulgaria) and Calarasi (Romania). Bulgarian experts have found out that the phenol content of the air at night is two to eight times above the admissible level. This is normal for the Romanian side, for which the admissible level is ten times higher than it is in Bulgaria.

At the meeting held in Calarasi, the Romanian side rejected the Bulgarian proposal for emission control and analyses at Romanian enterprises by Bulgarian experts. It was agreed in principle to control the air by lidar and to determine the direction of aerosol clouds. A mobile laboratory will also be used. The Bulgarian side will lend

two sampling devices to the Romanian side to equalize the methods of analysis. The meeting has fixed points in Silistra and Calarasi for permanent compulsory control of the hydrogen sulfide, phenol, carbon dioxide and nitrogen dioxide content of the air.

State of Nuclear Power Industry Examined

AU1011151792 Sofia KONTINENT in Bulgarian 4 Nov 92 p 8

[Todor Dimchev article: "Bulgarian Nuclear Power Industry Is Necessary Evil"]

[Text] The state of Bulgaria's nuclear power industry is a tragic legacy of the so-called planned economy that was experimented with for more than four decades. The extensively developing economy caused immense power wastage. In the absence of a well-founded energy strategy, nuclear energy was the straw with which the policy of squandering energy hoped to clutch onto to save itself. With no right to choose, we became hostages to the dangerous nuclear power plant technology that Soviet projects and equipment forced upon us.

The increased reliability and safety requirements following Chernobyl made investment in nuclear power plant construction a risky undertaking. In the United States, for example, orders were canceled for the construction of more than 100 nuclear power installations, because there it is now at least three times more expensive to build a nuclear power plant to modern safety standards than to build a thermoelectric power plant of similar capacity, and the commercial losses in the capital-devouring nuclear power plants are much higher than for thermoelectric power plants. In addition, the operating costs of nuclear power plants are steadily rising.

According to rough assessments, the six generating units at the Kozloduy Nuclear Power Plant cost more than 4 billion leva in "old money," and this is far from being the final bill. Huge amounts of money are needed for the following: rendering the waste fuel and radioactive waste safe and the construction of a national storage facility for them; reconstructing, making safe, and disposing of the generating units when they are finally shut down; training of personnel and providing scientific services; provision of resources to cope with possible accidents; compensation of losses arising from possible accidents; improving living and recreation conditions, and many other needs. The "savings" made in the construction of the nuclear power plant, which were used to pay immense bonuses to the managements responsible for the incomplete installations, the unrealistic prime cost of nuclear electric power, and the fictitious "plan" profits both now and in the future will have to be met by the taxpayer in the form of continuous new investment.

With all its unresolved problems, our nuclear power industry exists on subsidies and has no prospect of becoming profitable. In view of the low efficiency factor of its installed capacities, the industry will swallow ever increasing amounts from the budget, thus acting as a powerful inflationary factor. According to the most optimistic assessments, the possible reconstruction of the Nos. 1, 2, 3, and 4 Units will cost about $200 million in the first instance, after which a number of annual investments will be needed of several tens of millions of dollars apiece, and all this without any guarantee of attaining Western European safety standards. However, the two 1,000-Megawatt Nos. 5 and 6 Units will need much less investment to render them fully safe, although their frequent shutdowns at the moment are disturbing the fragile balance in the national energy system, causing havoc in electric power supplies. In the final analysis, production falls and living standards drop. Accordingly, normal operation of the 1,000-Megawatt units is essential, despite the fact that their emergency shutdowns conceal the safety risks. They are a necessary evil.

From the risk viewpoint, the Kozloduy Nuclear Power Plant is extremely worrying, and even dangerous. Numerous expert reports provide a relatively objective diagnosis. In their conclusions, the majority of the independent experts suggest this sensible alternative: to stop further operation of the Nos. 1 and 2 Units, and to withdraw Units Nos. 3 and 4 from service in stages, and in the near future. The reason is that the risk-benefit ratio is extremely unfavorable. It is evident that we should direct our efforts toward making the two 1,000-Megawatt units safe. They nonetheless possess certain modern technical features that conform to contemporary operational safety requirements, whereas the 1:1,000 risk factor of the four older units is unacceptable.

A modern energy policy requires giving priority to investments in energy saving and to the efficient utilization of the power produced. Our energy strategy should ensure the priority development of ecologically friendly energy sources, including renewable ones. This was the spirit of the memorandum sent by Bulgarian scientists and specialists to the meetings of the seven most developed countries in London and Munich. Protecting the environment by an efficient use of energy was the leitmotif of the Alternative World Energy Conference held in Madrid recently, which opposed the development of nuclear power. Energy saving and renewable energy sources were stressed as a reasonable alternative to ensure the salvation of the planet and the survival of life, in the spirit of the Rio '92 conference.

Government's Environmental Strategy Stressed at UN Debate on UNCED

AU0611205092 Sofia BTA in English 1937 GMT 6 Nov 92

[Text] New York, November 6 (BTA)—Bulgaria attaches great importance to the decision of Rio de Janeiro on the establishment of a commission on sustainable development, said Mr. Slavi Pashovski, Bulgaria's permanent representative to the United Nations, speaking at the General Assembly Debate on the report of the UN Conference on Environment and Development in Rio de Janeiro.

The Bulgarian representative said that in drafting future programmes in this area, special attention should be paid to the countries in transition from a centrally planned to a free market economy. He emphasized that the international financial institutions should take a more active part in the discussion of all problems related to sustainable development. In this context, he stressed the importance which Bulgaria attaches to its association with the European Community.

Further on in his statement, Mr. Pashovski outlined the action which the Bulgarian Government is taking to work out a comprehensive environmental protection strategy. He assessed in positive terms the role of Bulgarian nongovernmental organizations and movements in this respect.

CZECHOSLOVAKIA

Official Says Hungary Must Accept Slovakia as Dam Successor

AU2710145292 Prague CSTK in English 2133 GMT 22 Oct 92

[Text] Bratislava, Oct 22 (CSTK)— Following the division of Czechoslovakia on January 1, Czechoslovak-Hungarian commitments dating to the 1977 agreement on the joint building of the Gabcikovo-Nagymaros dam project can be resolved in two ways, according to Ivan Laluha, chairman of the Slovak parliament's Foreign Committee.

Either the Hungarian side will consider the agreement legally invalid, or it will respect the Slovak side's assumption of the agreement's provisions on the basis of treaties between the Czech and Slovak Republics, Laluha told the Slovak news agency TK SR today.

For Slovakia, only the second alternative is acceptable as we are prepared to become the successor to those agreements which were signed by Czechoslovakia and concern only Slovakia, Laluha said.

According to him, Slovakia has demonstrated little initiative in relations with its neighbors. He said Slovakia had not sufficiently informed European organizations about Gabcikovo-Nagymaros. Laluha remained optimistic about future Slovak-Hungarian relations, saying he believed in the good judgment of official Hungarian bodies and the political parties of the Hungarian minority in Slovakia.

Official Explains Progress of Danube Damming Operations

AU0311110592 Prague LIDOVE NOVINY in Czech 31 Oct 92 pp 1, 8

[Interview with Julius Binder, director of Vodohospodarska Vystavba (Hydraulic Engineering Works) in Bratislava, by Cestmir Klos; place and date not given: "We Will Build a New River Danube"]

[Text] **This is an interview with a man who dared—when the international conflict with Hungary was imminent—to issue the order to dam the Danube. He is Julius Binder, director of Vodohospodarska Vystavba in Bratislava.**

[Klos] CSFR Deputy Prime Minister R. Filkus said that you began damming the Danube without the knowledge of the Federal Government—and even the Slovak Government. Have you been reproached by some of the politicians?

[Binder] No. No one told me to dam or not to dam. I did not have to ask anyone. I have a building permit, valid since 18 November 1991, and no one has voided it. On the contrary, three ministers of the former Slovak Government charged me with damming the Danube by no later than 1 October. We failed to do so, and we have a one-month delay.

[Klos] Your closest colleague, government commissioner for the dam project, Mr. Kocinger, said exactly the opposite thing shortly before the damming had begun. Did you have a dispute?

[Binder] We get along very well. He said exactly what we had discussed: The Danube will not be dammed by 2 December. This is only a matter of words. The damming of the Danube will not be finished before 31 December. What is happening now is only implementation of one stage of the transfer of the navigation route to the incoming channel. This does not means damming the Danube.

[Klos] The international guarantee—that the energy cycle will not be put into operation before the decision is made by the tripartite commission—provided by Deputy Foreign Minister Z. Pirek to EC and Hungarian representatives is equally unconvincing, however. At the time he was making this promise, there were two turbines running, one of which was delivering electricity to the network for the entire district of Dunajska Streda....

[Binder] You know, the truth is so flexible. The turbines are indeed running. However, we wanted to dam the Danube when there is a flow of 1,000 cubic meters per second, and nothing could flow through the turbines then. However, we lost 4 days, from 20 to 24 September, and now the flow is more than double that level. Because of that, we had to close the levee on the pass-by channel and to ensure the flow through the turbines. Of course, this fact can be easily misused. In six days we will finish damming, and not a single liter of water will have to flow through the turbines.

[Klos] A third paradox applies to the dike. On the one hand we hear that not even a nuclear bomb could destroy it, while, on the other, its construction is allegedly a reversible step that can easily be undone at the recommendation of the tripartite commission....

[Binder] A bomb would not demolish it. But, if we wanted, we could help the water erode it. A small mole can cause a large dam to collapse. If we rectified the flow,

dug up channels.... We would be able to build a new Danube 100 meters further on our territory, including all its meanderings. I fully confirm Z. Pirek's position, that is, that we can put everything back in its original state. But, why should we?

[Klos] Whenever you have the opportunity, you speak about sabotage, despite the fact that the police report described the incident that crippled the control of the gate lock as mere theft. Why do you not trust the report?

[Binder] Because the group of investigators were locals—from Dunajska Streda. The things that disappeared are of no use to an ordinary man. What would anyone do with punched control cards? The capacitors—which could be of some use to someone—were removed only to provide access to the cards. It was sabotage!

[Klos] You try to confront the objections of environmentalists—who point to the complete devastation of regions along the Danube—by using their own arguments. Why do you think that Bratislava could collapse?

[Binder] Without the dam, Bratislava's old city, all those magnificent historic buildings on the River Danube, would be jeopardized. At the place where the old bridge is the gravel layer in only 1 meter deep. If it were washed away, things would collapse. The Danube would wash away the fine sands that make up the sedimentary base; but Bratislava old city stands on them—shifting sands could cause a large number of buildings to collapse.

[Klos] Why did this problem arise only when arguments against the construction of the reservoir in Hrusov were successfully raised?

[Binder] It was discovered during a geological survey made in connection with the construction of a rapid transit rail line. And, also because the problem of the sinking bed of the Danube is a process that increases with time. The reason is the so-called "hungry water" [hladova voda], which is devoid of all gravel from the Alps. Gravel is being amassed at the dams in the upper part of the river.

[Klos] Despite this, gravel is being mined at Bratislava....

[Binder] But not at the critical point. Bulldozers must be used to ensure the necessary depth, so that the navigation route is not jeopardized. If the Danube were not dammed, gravel would have to be brought to the endangered area. The Austrians made calculations: Every five minutes a fully loaded Tatra truck would be needed here. Because of similar problems, the Austrians intend to build another dam close to Vienna. Without the Hrusov reservoir, it would be impossible to ensure the stability of the river bed, protect the region from floods, ensure uninterrupted navigation, and save the wetland forest.

[Klos] Ecological groups, who are very afraid of the Danube being dammed, say the contrary. When are you ready to complete this damming?

[Binder] On 31 December.

EC Commission Issues Statement on Gabcikovo Project

AU1211103792 Prague HOSPODARSKE NOVINY in Czech 9 Nov 92 pp 1, 14

[Jan Zoubek report: "The EC Commission Issues a Statement on Gabcikovo"]

[Text] Brussels—The European Community Commission issued a formal statement on the Gabcikovo water project on 6 November. Pablo Benavides, responsible within the EC Commission for relations with the countries of Central and East Europe, briefed our Brussels correspondent on the contents of the statement.

Pablo Benavides chairs the "International Expert Commission on Gabcikovo" established in London on 28 October.

It is apparent from the EC Commission statement that agreement with the continuation of essential work at Gabcikovo after a period of two weeks—and only work associated with the provisions necessary against possible flooding—does not mean preliminary agreement with the damming. The letter sent by Franz Andriesen to the prime ministers resolutely demands that work be suspended on 21 November.

Senior officials from the CSFR, Hungary, and the EC Commission will meet in Brussels on 27 November to review the results of the expert working group's activity and to formulate a possible final solution that will be binding for both sides in accordance with the London Agreement. The experts are paying most attention to issues concerning the environment and to the safeguards against flooding. They do not have a mandate for issues such as border changes.

The Federal Government is the partner in the negotiations, but the meeting between the republican governments in Czechoslovakia last week has emphasized that the Slovak Government will assume absolute responsibility for all the commitments made by the Federal Government. According to the EC Commission, agreement between the governments means the Czech Government is ready to bear its share of the costs associated with the possible destruction of the dam if international arbitration or the International Court in The Hague make such a decision. Pablo Benavides said that if work on the dam were to continue, this would be a gross violation of all the commitments made by the CSFR. He reiterated that the definitive damming of the Danube is not the issue.

The decision of the international arbitration (led by the EC Commission) on the fate of Gabcikovo will be definitive and binding for both the CSFR and Hungary. If no decision is made, the entire matter will be transferred to the International Court in The Hague; however, Hungary's request for the issue to be discussed here has been suspended in the expectation of a final verdict from the international arbitration. If no verdict is reached,

Hungary's request will be automatically resubmitted, and Czechoslovakia has promised to accept the decision made in The Hague.

Contract Signed for Fuel Rods From Former GDR Nuclear Plant

AU0211131392 Bratislava SMENA in Slovak 29 Oct 92 p 6

[unattributed report: "Fuel Rods for the Nuclear Power Station"]

[Excerpt] According to Maria Vandlikova, head of the nuclear fuels department of the Slovak Energy Works (SEP) state enterprise, fuel rods from the decommissioned nuclear power plant at Greifswald (located in the former GDR) are destined for the nuclear power plants at Jaslovske Bohunice and Dukovany. The SEP and the Greifswald power plant have concluded a contract involving the purchase of unused fuel rods for our nuclear reactors of the V 213 type. The contract envisages the delivery of 462 fuel rods, of which 351 have already been delivered. The last shipment will comprise the remaining 111 rods. The delivery and transport of the unused fuel have been approved by the FRG and CSFR nuclear safety surveillance authorities. This is a routine deal that is beneficial for both sides, Vandlikova said. [passage omitted]

Power Workers Demand End to Temelin Nuclear Plant Construction

LD0411233692 Prague CSTK in English 2119 GMT 4 Nov 92

[Text] Prague, Nov 4 (CSTK)—The trade union committee of the Tusimice power plant in North Bohemia today proposed that construction of the Temelin nuclear power plant in South Bohemia be stopped and all investments, earmarked for its completion, used to reduce the harmful effect on the environment by thermal power stations.

In a letter addressed to Czech Premier Vaclav Klaus, North Bohemian power industry workers said the Czech energy works will achieve a profit of 109,000 million crowns (3,892 million USD) in 1992-1997, of which 96,000 million crowns are to be used for environmental projects. While the rest would be sufficient for repowering power plants put out of operation, the completion of the Temelin nuclear power plant would cost at least 47,800 million crowns (about 1,700 million USD), the letter said.

The North Bohemian power plant workers said they had pointed out the economic consequences of the Temelin nuclear power plant's completion to Czech Economics Minister Karel Dyba last April. As nothing has changed since, they said in their letter to Klaus that Dyba is responsible for the continued squandering of financial resources for Temelin, obtained through the devastation of the North-West Bohemia mining region.

Italian, Russian Mafias Said To Cooperate in Narcotics, Weapons Trade

AU0911205392 Prague LIDOVE NOVINY in Czech 6 Nov 92 p 2

[Jan Subert article: "Know-How and Cut-Throats"]

[Text] According to information provided by foreign anti-drug centers, the Russian and Italian mafias have joined forces in recent months. Intelligence information indicates that this happened at a meeting of the bosses of both organizations on CSFR territory, probably in Prague. The same sources are indicating that, owing to the activity of these criminal gangs on the territory of the former Soviet Union, the volume of narcotics on world markets will rise by 40 percent in three years.

Lieutenant Colonel Jiri Vacek, adviser to the federal interior minister, gave us information depicting the current state of affairs and the expected developments in the internationally organized criminal narcotics trade. He did so after he had returned from a meeting with top-level representatives of anti-narcotics bureaus in the United States, Italy, Germany, Thailand, and some African countries, that took place, under strict security measures, at the San Giorgio Maggiore island in Venice. In an interview by LIDOVE NOVINY, he gave more facts:

Part and parcel of the treaty unifying the Italian and the Russian drug mafia is an agreement under which the Italian side will provide "commercial know-how", that is, experts at laundering dirty money. The Russians, in turn, will supply professional cut-throats to protect transit routes and the distribution network.

The drug gangs most dangerous for Europe and the entire world are criminal organizations forming in the countries of the former Soviet Union. According to their internal structure, they can be divided approximately into three groups. The first group consists of soldiers who served in Afghanistan and members of the former KGB. The second, described as the "Karate mafia", is composed of former wrestlers and boxers. The third one consists of people from the dissolved state administration and former foreign trade enterprises, who provide contacts, market, and financial coverage. According to the place where they were established, we may speak about the Russian and the Ukrainian mafias, the latter mostly represented by the so-called Chechen branch. Very powerful and much feared gangs, with connections to Islamic fundamentalism and Iran, have been established in Uzbekistan and Tadjikistan.

The Russian and Ukrainian mafias, which have been operating on our territory for a longer time, do not specialize only in drugs. To the same extent, they deal in radioactive materials (cesium and strontium), and components for the production of nuclear weapons (uranium 235 and plutonium), and other strategic weapon materials. The main transit routes lead through our territory, and only a part of these goods go through Poland and

Hungary. It is almost certain that after the trade in strategic weapon materials has been blocked, drugs will be transported via the same routes.

The territory of our country is thus getting into the center of attention of the European security organizations. According to estimates, in five years, the proportion of general criminal activity committed by organized crime should reach some 40 percent. Police in the independent Czech and Slovak Republics will have to take steps, in tandem with their European partners, to make it possible to face this danger.

HUNGARY

Antall Appeals to Mitterrand To Mediate in Danube Diversion Dispute

LD2010222392 Budapest MTI in English 1447 GMT 20 Oct 92

[Text] Paris, October 20 (MTI)—Hungarian Prime Minister Jozsef Antall has requested French President Mitterrand to mediate in the Hungarian-Slovak dam dispute, in a letter presented by Janos Szavai at Elysee Palace today.

In the letter, Antall outlines the danger of irreversible environmental and ecological damage from the operation of the hydroelectric power station.

Concerning the Danube diversion, the Hungarian prime minister points out that the diversion is an unlawful act which violates the principles of sovereignty and territorial integrity, the inviolability of state frontiers, and is incompatible with the basic principles of the UN Charter and the Helsinki Final Act.

Diversion of the Danube would destroy Hungary's freshwater reserves and arable lands, and bring about a legally and politically irreversible situation in the relationship between the two countries. In this case, Hungary would ask for setting to operation the CSCE mechanism of consultation and cooperation, and consider further steps, such as contacting the UN Security Council.

However, a possible breach of law Hungary would suffer from Slovakia would also hurt the interests of the international community by giving rise to a new hotbed of conflicts that would jeopardize stability and cooperation in Europe, Antall wrote to Mitterrand.

Events in the coming days are to have long-standing effects on conditions in the region. The main question is whether the Slovak Government will be guided by a sober assessment of circumstances and an intention to cooperate with its neighbours, or by a kind of misinterpreted national pride and irrational considerations when deciding to rechannel the Danube, or to postpone it at least until the end of the proposed international procedures.

"This is a serious decision, which I feel the whole international community should try to influence in a positive direction. For this reason, I request you Mr President to use your political, moral and personal leverage in this 'last hour' in order that reason come to prevail and the political conflict threatening the region's stability can be avoided. For my part, I shall adjust all my further moves to serve this goal," Prime Minister Jozsef Antall stressed in his letter to President Francois Mitterrand.

Government Issues Statement on Danube Diversion

LD2310201192 Budapest MTI in English 1736 GMT 23 Oct 92

["Hungarian Government Statement on Gabcikovo Issue—Full Text"]

[Text] Budapest, October 23 (MTI)—The Hungarian Government, and the Hungarian public that followed the international talks related to the Gabcikovo-Nagymaros barrage system, received news of the unsuccessful outcome of the Brussels talks held in the middle of week with disappointment and shock.

The talks clearly proved that the Czech and Slovak side is not ready to suspend the diversion of the Danube, thus creating another danger of conflict in this region. Preparations for the diversion continued at a stepped-up pace even during the talks. The damming up of the Danube bed has begun, thereby the Czech and Slovak side has confronted the Hungarian Government and the international factors interested in the settlement of the debate through negotiations with an accomplished fact.

In this moment of decisive importance, the Hungarian Government considers it its obligation both towards the nation and the world to set forth its views on why and how this serious emergency, which today can be considered as accomplished, came about, who bears responsibility for this, what consequences can be expected, and what steps Hungary will take at this turning point, in a situation that can only be reversed with increasing difficulty.

When it cancelled the 1977 interstate contract, the Republic of Hungary started out from the fact that an ecological emergency would come about with the construction and placing into operation of the barrage system, something that could be avoided only by cancelling the agreement, and abandoning the complete barrage system. No single country can be bound by a contract which essentially prescribes the implementation of an impossible task, in this case, that it build a barrage system that causes irreparable damage on its own area.

The circumstances which formed the basis of the contract have changed fundamentally since the contract was concluded, and then amended. The Czech and Slovak side did not meet even the water quality and nature

protection obligations that were set down in the interstate contract itself. The general international environmental protection standards that have come about since concluding the contract enjoy priority over the terms of the contract.

By unilaterally diverting the Danube, the Czech and Slovak side commits a grave violation of international law which in itself is sufficient reason to cancel the 1977 contract.

The Government of the Republic of Hungary wishes to recall that the Hungarian side moved in 1991—on the basis of a resolution by the National Assembly—to cancel the contract by mutual agreement, furthermore, it proposed to settle the situation resulting from the cancellation, and to conclude a new bilateral contract aimed at the rehabilitation of the region. The Hungarian side was not averse to contributing—both in the technical and financial sense—to a solution based on common interests.

The statement that Czechoslovakia was forced to divert the Danube because the Hungarian Government cancelled the 1977 agreement is both false and misleading. In reality, the reason for cancelling the contract was that neither the federal, nor the Slovak Government showed readiness to work out a new agreement acceptable to both sides. They also did not accept for the planned trilateral expert committee to work out its recommendations to resolve the interstate legal debate alongside the suspension of the diversion. With this, the Czech and Slovak Government also rejected the related efforts of the European Community.

The Government of the Republic of Hungary considers the diversion of the Danube to Czechoslovak national territory to be a grave infraction of international law, as it violates the sovereignty and territorial integrity of the Hungarian state, which is protected by the fundamental norms of international law. It runs against the principle of the inviolability of state borders, and the peace treaties of Trianon in 1920, and of Paris in 1947, as it alters the line of the border between the two countries determined in the peace treaties.

The diversion is also contrary to the agreement signed by the two states in 1976 on the water management of border waters, which binds any sort of intervention to the agreement of both sides. It is also incompatible with the rules and principles that have come about in general international law on the use of international resources. It violates the principle of banning damage that takes place under the jurisdiction of a neighbouring state.

It is worth noting that the Czech and Slovak Government has never given any sort of technical description on its planned works related to diverting the Danube, in spite of repeated Hungarian requests, and did not even offer a reply to the international legal counter- arguments put forward by the Hungarian side.

The unilateral diversion of the Danube is not only an unlawful step, but one that brings about a situation which causes serious environmental damage and is fraught with political danger. The brutal intervention alters the natural environment of the entire region in an unfavourable manner, harms the drinking water supply of millions of people, and subjects them to the danger of flooding. The large-scale environmental damage—although it mainly affects Hungary—spreads beyond the borders of our country.

Hungary acknowledges the efforts of the European Community and other international forums, the governments that accepted a role in the matter, with appreciation and gratitude. The coming about of a new conflict situation in Europe is not in anyone's interest, and everything should be done to avoid this.

The conduct of the Hungarian Government is determined by the intention to safeguard the living conditions of the current and future generations, and the responsibility it feels for this. The government cannot refuse this responsibility, and its right to take steps on the basis of this acceptance of responsibility cannot be doubted.

At the same time, the government has never left out of consideration to uphold the goodneighbourly relation, and cooperation. Just as in the past, it wishes to settle the debate on the basis of the European order of values, through a peaceful way of negotiations. The unilateral diversion of the Danube also endangers the cooperation of the countries in the Visegrad group, and their common integration process into Europe.

The issue is no longer the prevention of a unilateral infringement of the law, but the remedying of a law infringement that can be redressed only with difficulty. There is no doubt that full political, legal, economic and moral responsibility for the situation that has come about falls on the current international subject of law, the Czech and Slovak Federal Republic, and subsequently on the new states coming into existence on its area.

The Republic of Hungary submitted its action against the Czech and Slovak Federal Republic in the matter of the Danube's diversion to the International Court in The Hague today, Friday, October 23. At the same time, the Hungarian Government again calls for the immediate summoning of a special session of the Danube Commission.

The Hungarian Government has initiated to launch the urgency, crisis-management mechanism of the Conference on Security and Cooperation in Europe, with the aim that it utilize the assistance of the member countries to resolve the conflict. The government continues its efforts in the international forums whose agenda already includes the issue, it maintains close contacts with certain governments, with the European and international organizations competent in the matter, and is considering to take steps beyond the above.

Foreign Minster Warns Slovakia Will Pay 'High Price' Over Danube

AU0311131392 Budapest PESTI HIRLAP in Hungarian 29 Oct 92 p 4

[Interview with Foreign Minister Geza Jeszenszky by Laszlo Danyi; in Korosladany, date not given: "Geza Jeszenszky Will Not Resign"]

[Text] Foreign Minister Geza Jeszenszky recently participated in a successful forum held in Korosladany. A desire to improve things and a concern for the fate of the country clearly emerged from the speeches at the forum.

After the meeting, Geza Jeszenszky gave us an interview.

[Danyi] Mr. Jeszenszky! The Hungarian press dealt with the outbreak of pig cholera in Bekes county quite thoroughly recently. Mihaly Belanka, the general director of the Meat Processing Plant in Gyula, accused journalists of serious professional mistakes. What is your opinion about this? Should we have kept silent?

[Jeszenszky] Not at all. The problem is the existence of this disease, and not the fact that it has become known. Obviously, we had to take restrictive measures, and we also have to suspend our exports for a while, but this is the task of the government. I am confident that a solution will be found soon. Such things also happen in other countries.

[Danyi] Regarding the diverting of the River Danube, can we expect serious and efficient countermeasures on the part of the Hungarian Government, if the Slovak side carries on with the project?

[Jeszenszky] In any case, we will take the issue to international forums, such as the EC and the CSCE. We have already submitted our claim to the International Court in The Hague. Slovakia will be in the dock and it will pay a very high price for this unilateral step, which is destroying the environment. The diversion of the River Danube violates Hungary's territorial integrity, because the Danube is also one of our national assets, just like the land within our borders. We have gained the diplomatic and moral victory, and we will see the positive consequences of this victory in the long term.

[Danyi] Opinions differ about the value of our moral victory, especially among the opposition parties. Do you fear the possibility that the Foreign Ministry and you personally will be blamed for an ecological tragedy for our largest river, and you will be asked to resign?

[Jeszenszky] Not at all, and I do not think of resigning either. The Hungarian Foreign Ministry only dealt with this issue intensively in its final phase. Before, this issue was mainly being discussed by technical and environmental experts. I must point out the activity of Foreign Ministry State Secretary Janos Maronyi, who has earned eternal merit in that our ministry has already taken the necessary measures.

Official Discusses Progress of London Talks on Danube Controversy

AU0511110292 Budapest MAGYAR HIRLAP in Hungarian 30 Oct 92 p 3

[Interview with Foreign Ministry State Secretary Janos Martonyi by Ivan Scipiades; place and date not given: "The Legal Violation Continues"]

[Text] Irrespective of the recent agreement in London, it is absolutely clear that the legal violation (by diverting the navigational flow of the Danube) is continuing. I do not think that anyone realistically thought that the Hungarian delegation would conclude the talks in London by saying that the legal violation has ended. This legal violation is continuing, and the flow of the Danube is being obstructed; therefore, we must seek international legal assistance. The important thing is that the other side has accepted our proposal to turn to an international forum—Foreign Ministry State Secretary Janos Martonyi pointed out.

[Scipiades] Have the two sides reached a compromise in London?

[Martonyi] Regarding the essence of the debate, this is not a compromise but a procedural way forward. This debate should be decided through an international court of justice. We have agreed here on the procedure to follow, and not on settling the issues of the debate. Therefore, there is no point in asking who has won or who has not won or who has compromised. We had to defuse the situation and somehow create the way forward to further steps.

[Scipiades] It seems that the Slovaks have accepted the Hungarian-EC proposal made in Brussels last week.

[Martonyi] In a different form and with the addition of some very important new elements.

[Scipiades] In your opinion, what are these important elements?

[Martonyi] I regard Article No 4 as the most important one, in which both sides undertook to take the issue, including all its elements, to a binding decision by an international court of arbitration or to the International Court in The Hague.

[Scipiades] What other international courts could we talk about in addition to the International Court in The Hague?

[Martonyi] There are various possibilities. We talked about the future compulsory court of justice to be created within the CSCE. If this mechanism is set up in the foreseeable future, we will perhaps be able to take the issue there, but international law also recognizes ad hoc courts of arbitration. The important thing is to make the procedure legally binding, so that both sides have to implement its decisions. I must say that the Hungarian

side continues to favor the International Court in The Hague and we hope the other side will also accept this.

[Scipiades] How is it technically possible both to leave the river dam at Dunacsuny and to have the normal water level unchanged between Csuny and Szap, where the Bos by-pass canal flows into the Danube?

[Martonyi] The Slovak side have accepted responsibility for this in this agreement. They say that this can be achieved through the spillway engineering structure. According to the protocol, the entire quantity of water here will not be less than 95 percent of the Danube waters.

[Scipiades] In other words, those things that the Hungarian side found inexplicable at Brussels last week are now clear. The CSFR side offered at that time to leave the dam intact and to also leave the water level, and to reroute ship traffic to the by-pass canal.

[Martonyi] Obviously, there was such a proposal, but it appeared in another context and on its own, without other elements. Let us not forget that the London agreement also has a second, third, and fourth point. Thus, there is also a priority test, and this brings us back to the previous EC proposal. Unfortunately, the dam has been concluded in the meantime, and, therefore, the test no longer deals with whether the dam should be constructed or not, but it can deal with whether the status quo ante, that is, the situation prevailing before the construction of the dam, can be recreated or not.

[Scipiades] The navigational route has been diverted; in other words, something that Hungary has always rejected is now a fact.

[Martonyi] Irrespective of the London agreement, it is absolutely clear that the legal violation is continuing. I do not think that anyone realistically thought that the Hungarian delegation would conclude the negotiations by saying that the legal violation has ceased to exist. This violation is continuing and the Danube has been diverted; therefore, we must seek international legal assistance. The important thing is that the other side has accepted our proposal to turn to an international forum where both sides will be able to present all their demands, including those for compensation.

[Scipiades] Is this agreement in accordance with the decision of the Hungarian Parliament made in April 1992, a decision stipulating the abrogation of the contract and the restoration of the original environmental status?

[Martonyi] It is 100 percent in accordance with this, because the last point in the protocol points out that both sides maintain their legal positions and rights. I think that the Hungarian Parliament also accepts our decision to turn to the International Court in The Hague, because the six-party coordination that took place in the meantime made it absolutely clear that everyone agreed with this decision. We submitted our claim to the International Court last week.

[Scipiades] How is this issue represented in the priority mechanism of the CSCE?

[Martonyi] The first step has been made, and the start of the second step depends on us. Actually, this depends on the future of the agreement initialed yesterday. First, this will depend on whether all sides will accept the agreement; secondly, whether all sides will regard it as binding; and thirdly, whether all sides will fully implement the agreement. Then, we will be able to decide on whether to start the second phase.

[Scipiades] In a previous interview, you said that if Slovakia fails to implement the London agreement, the question might be raised as to whether an independent Slovakia will inherit the rights embodied in contracts signed with the CSFR.

[Martonyi] There is a legal argument to the effect that if Slovakia fails to accept responsibilities deriving from previous CSFR agreements, it should not receive rights either, but I find it much more important that the EC has thrown its full political and economic weight behind the agreement signed yesterday. I do not think that any side could allow itself not to honor this agreement. Let us clearly admit that, unlike us, the EC has some serious means to have this agreement honored. After the dissolution of the CSFR, the two new countries will have to renegotiate their association agreement with the EC. At the summit held on 29 October, Slovak Prime Minister Meciar said that Slovakia would like to be a full member of the EC, and it is counting on EC financial and economic support. Thus, there are things that carry a lot of weight.

[Scipiades] This explains, therefore, the fact that the Slovaks agreed to things they had previously rejected.

[Martonyi] They received rather clear political signals from Brussels and London, and perhaps from elsewhere.

Hungary To Accept Tripartate Commission's Gabcikovo Recommendations

AU0511123192 Prague CSTK in English 1946 GMT 3 Nov 92

[Text] Prague/Budapest Nov 3 (CSTK)—The Hungarian side will accept all conclusions and recommendations by the tripartite expert commission also in case they are unfavorable for it, Miklos Csapody, a member of the Hungarian parliament Foreign Affairs Committee, today told CSTK by phone.

However, he stressed that this does not mean a change in Hungary's stand on the completion of the Gabcikovo hydroelectric project on the Danube. He said that Hungary continues to consider the damming of the Danube's bed illegal. Csapody said the Hungarian society was surprised by the policy of faits accomplis from the Slovak side and sees it as blackmail. However, it still hopes a solution will be found and believes that the only way out of the current dispute over Gabcikovo are the

recommendations and conclusions by non-partisan international bodies to which the both contractual sides should apply.

The Hungarian side considers the damming of the Danube and the following change of the navigation route to be the violation of its territorial integrity. In Csapody's view it is not essential whether the state frontiers or only their character is changing. The current Hungarian boundaries were defined by the Paris Peace Conference and any change will mean a violation of both states' integrity. A settlement of this legislative problem should be dealt with by an international judicial body, he added.

In Bratislava today the Hungarian Christian Democratic Movement (MKDH) and the Egyutteles movement said they think the current decision of the Gabcikovo twin-dam project issue is dangerous to the environment and further development of international relations in this region.

In a statement handed to journalists today, representatives of both Hungarian movements said they stand against unilateral decisions, concluding the damming of the Danube, and insist on the tripartite international commission to assess impacts of the construction on the environment.

We consider it to be a flagrant violation of fundamental human rights that views of people who expressed their disagreement with Gabcikovo completion through different forms of civic protest are ignored, said the statement.

The Hungarian parties in Slovakia are also concerned over unilateral steps by the Slovak Government, running counter to the fact that the Gabcikovo issue is still within the Federal Government's jurisdiction. Both parties believe that because of this the problem could become a new burden in Slovak-Czech relations, the statement said.

POLAND

Threat From Hazardous Materials at Large Industrial Plants Examined

93EP0028A Poznan WPROST in Polish No 40, 4 Oct 92 pp 34-37

[Article by Eryk Mistewicz: "Bomb Factories: An Equipment Breakdown or Terrorist Attack at the Gdansk Bimet, Where Several Dozen Tons of Ammonia Are Stored, May Imperil One-Half of the Population of the Gdyniak-Gdansk-Sopot Tri-City"]

[Text] In Poland more than 100 large industrial plants use so-called hazardous materials. A special threat exists wherever liquid chlorine, ammonia, ethylene oxide, phosgene, and acrylonitrile are stored and used in manufacturing.

In Warsaw Voivodship alone 23 industrial plants use large quantities of toxic compounds (2,600 metric tons in the city of Warsaw itself alone). At the Norblina Rolling Mill, where ammonia is stored in a 30-ton tank outdoors, Civil Defense inspectors are speaking of the need to eventually evacuate the population within a radius of 2 km. Were the chlorine accumulated at the Water Supply Works to be released, a rescue operation would have to be conducted within a radius of 30 km. As for the Polfa Plant in Tarchomin, it contains a veritable chemical bomb for Warsaw—it regularly stores about 100 metric tons of potassium cyanide.

At the Gdansk Bimet, which is located in downtown Gdansk, several dozen metric tons of ammonia are stored. Inspectors warn that in the event of a terrorist act 20 tons of released ammonia can seriously imperil people within a 20-km area, that is, the population of one half of Tri-City.

Huge quantities of phosgene and hydrofluoric acid, respectively, have been accumulated at the Polfa [Pharmaceutical] Plant in Starogard and the Petrochemical Plant in Plock. Were the chlorine accumulated at the Organika-Rokika Works in Brzeg Dolny to be released, thousands of casualties would have to be expected (23,000 deaths, 143,000 severe and medium injuries, 417,000 light injuries, within a zone of more than 6,000 square kilometers, this being the finding of an analysis of a simulated breakdown).

The accident with a train of chlorine-containing railroad cistern tanks near Bialystok in 1989 made it clear for only a brief period of time that a tragedy can happen not only in the vicinity of industrial plants. The nature and causes of perils to the transportation of hazardous materials and their location across the country can be roughly determined on the basis of records of chemical rescue teams. It turns out that such accidents occur practically anywhere, and most of them are caused by neglect and disregard of basic rules for the security of the transportation of hazardous materials. A similar situation exists on the highways: one-third of the drivers lack any training for the transportation of this kind of freight—they themselves decide on the routes and loading time without notifying the appropriate services. The police, even in downtown Warsaw, confine their control to checking signposts.

No rescue plans have yet been worked out for the nation's capital in the event of a chemical disaster, although drivers of chlorine-containing cistern tank trucks cruise in peak traffic hours on the streets of Warsaw's Zoliborz Borough.

Only recently has an evacuation plan been prepared in the event of a flood following the breakdown of a dam at Debem, or in the event of a breakdown of nuclear reactors in Swierk (although the first reactor had been activated there as far back as in 1958). In the latter event, the evacuation of 53,000 people is planned. But individual responsibilities have not yet been pinned down

and the funding sources for the rescue action are still unknown. Civil Defense is not prepared for this, and these plans remain only on paper. At the latest session of the Voivodship Defense Committee it was stated that "The conduct of an efficient rescue operation in the region of Warsaw is nowadays infeasible, chiefly owing to the inefficient communications system."

A tragedy, with consequences comparable to those of a chemical spill, may also happen at any of the 147 larger water dams. Experts from the Center for the Engineering Supervision of Dams at the Institute of Meteorology and Water Management estimate that as many as 22 hydrotechnical projects are by now quite unsafe, and 32 others are marginally safe. According to the NIK report, two especially dangerous spots are the dams at Brzeg Dolny on the Odra River (built in 1958) and at Wloclawek. The latter is in a catastrophic condition: Water flowing from a height of 15 or so meters is punching out 10-meter holes under the concrete embankment protecting the stage of fall; the river increasingly penetrates the bed of the dam, and by now a dam-burst is merely a question of time. "There is danger to the population over a considerable area below the stage of fall," warns the NIK report.

"Extraordinary environmental perils may arise any time and anywhere," said Wieslaw Paluszynski, deputy inspector general for environmental protection. "They menace human health and lives and may cause increasingly grave harm to an already greatly devastated environment. At a distance equal to the distance between Poland and the Chernobyl Nuclear Power Station there exist 26 active nuclear facilities out of the European total of 150. In a normal country any reactor breakdowns serve to infer conclusions."

Unfortunately, there still is no systematic monitoring and evaluation of the radiation situation.

Too many cooks spoil the broth. Professor Stefan Kozlowski, the then head of the Environmental Protection Ministry, had wanted to take over from the State Atomic Agency the Central Radiological Protection Laboratory and incorporate it in the early warning system being established at that ministry. But the head of the State Atomic Agency refused, and the chief sanitary inspector even proposed shutting down that laboratory as a "too expensive" facility.

The State Inspectorate for Environmental Protection gained only a year ago the right to organize a national environmental monitoring system, that is, to perform systematic and coordinated measurements. But the custom of notifying environmental protection services about potential dangers still has not been adopted, and likewise it is practically a mystery who is to "warn and notify the population" about extraordinary dangers.

Not even elementary information has been provided for the people who live in the environs of industrial plants, although the substances stored and used at these plants are known to experts, as are the consequences of potential accidents. The public does not know whether it should hide in the cellar or on the roof in the event of a chlorine spill. They do not know either who is supposed to tell them that. Industry, the principal source of these hazards, does not feel burdened with this duty.

Alarm sirens, even when turned on, would be ignored, because the public associates them with solemn funerals, anniversary celebrations, and practice drills, rather than with any real peril. No one knows who is in charge of ordering preventive actions, such as restrictions on the consumption of specified farm products or on exposure in outdoors areas.

Although such hazards are potentially present in magnified form on two-thirds of the country's territory, Poland has only 109,500 shelters and hideouts, most of which were built before 1960. There is a shortage of gas masks, drugs, and food, because instructions for using the shelters do not provide for situations of sudden danger. Moreover, there are no shelters in smaller cities. Besides, Civil Defense studies have shown that the shelters are poorly maintained and often used for extraneous purposes.

Following the publication of the advertisement, "For sale: antiaircraft and nuclear shelters," in Krakow newspapers, phones began to ring at the company that had placed that advertisement, and three persons decided to make an advance payment for "a shelter under a house."

In Switzerland, there is room in the shelters for 95 percent of the population (also in the event of ecological disasters); in Sweden, 86 percent; in Denmark, 56 percent; in Czecho-Slovakia, 40 percent; and in Germany, 11 percent. But in Poland shelters can accommodate only 4 percent of the population, and there are barely enough gas masks and protective clothing outfits for 8 percent of the citizens.

In this country wishful thinking of the kind "If anything happens, we declare a state of emergency" is followed, despite the fact that it is known that it is the activities of specialized services that matter most in rescue operations.

But legal foundations for chemical rescue operations are absent, the financial aspects of such operations have not been regulated, and there is a lack of an agency coordinating the whole of the activities of these services at 40 particularly dangerous workplaces. The six professional chemical rescue teams attached to the chemical plants in Plock, Bydgoszcz, Tarnow, Pulawy, Oswiecim, and Brzeg Dolny are supposed to operate only in the event of accidents at their own plants; providing outside assistance is to them merely a question of moral obligation.

Recently some chemical rescue services began to be liquidated, because they exist solely owing to the goodwill of the industrial plants to which they are attached and which subsidize them.

"This year we had to deal with a butadiene fire in Oswiecim and a cataclysm was averted only owing to an efficient and self-sacrificing rescue operation.

"A couple of days later another fire broke out, once again in Oswiecim. The facilities are becoming older and older, and we are balancing ourselves on an increasingly thinner rope," said Jerzy Wronski of the State Labor Inspectorate.

The fire brigades, which usually are informed about chemical accidents, are receiving a growing number of calls about gas explosions and road accidents. Recently a Yelets truck hauling a cistern tank containing 25,000 liters of ethyl gasoline, which began to leak, fell into a ditch near Malbork. At any moment an explosion could have occurred, but the local fire department lacked the right pump. Such a pump was had by the local railroad guards, but their commander refused to help out, aa did the commander of the nearby military unit from which, incidentally, that cistern tank was being transported. The gasoline began to spill into the ditch....

The division of powers and responsibilities and functions still remains unclear. Likewise, legal foundations for rescue operations are still absent: We lag behind in the legal regulation of such matters not only with respect to the West but also with respect to the neighboring countries.

"It used to be that 'the law of the mimeograph machine' sufficed, for who could have imagined 20 years ago a breakdown of the Friendship Pipeline, [carrying crude petroleum and/or natural gas to Poland from the former Soviet Union]?" asked Professor Ryszard Paczuski, a legal expert at the Mikolaj Copernicus University in Torun. For the last seven years there has been parochial dissension among the various ministries, which to this day discuss how to define "breakdown," "catastrophe," and "environment." They all officially thanked Prof. Kozlowski for pressing for an urgent settlement of this issue, but at the same time the current messed-up status of the proposed law on extraordinary environmental perils suits many of these agencies just fine, because thus they can disclaim responsibility when a tragedy happens.

The issue of accountability is still being pondered, and in the last eight years seven different ministers of environmental protection have been appointed, one after another, which also does not contribute to resolving these matters.

"At present it is not only cooperation that is lacking: The rescue teams under the jurisdiction of different ministries are even ignorant of each other's existence," said Director Jerzy Ludwiczak of the Taskforce for Counteracting Extraordinary Environmental Perils, State Inspectorate for Environmental Protection.

"The huge ecological peril still is not perceived by certain institutions, while others do perceive it but lack the funds. Others still have, to be sure, the funds and equipment, but they are not obligated to conduct rescue operations," said a senior expert at the KNT [Railroad Engineering Supervision].

At the Ministry of Health, for example, a disaster is not mentioned unless there are deaths among the casualties. The Ministry of National Defense views counteracting extraordinary environmental perils as an opportunity for keeping alive an ossified paramilitary formation, Civil Defense, which has for years now been hanging on by the grace of the budget. The Ministry of Transportation, the Ministry of the Interior, and the National Security Bureau support the activities of the Ministry of Environmental Protection.

The final draft of the law on extraordinary environmental perils is to be completed by the last-named ministry by the end of October. The new law puts an end to political accountability and shifts from the budget to the perpetrator or to a special insurance fund the burden of counteracting the effects of such perils.

This should also result in unifying operating procedures and determining the division of powers and accountability on the basis of European and international conventions.

"Any law, even an optimally worded one, merely provides a certain framework and legal foundations for action. Unless translated into the language of specific undertakings, it produces no effect," said Prof. R. Paczuski, the framer of underlying principles of the law draft.

"Extraordinary environmental perils always are hypothetical perils, and anybody who claims that he will settle them, that he will completely solve the problem, is a liar," said Director J. Ludwiczak. "Extraordinary environmental perils will always happen, and we should be optimally prepared for them."

* * *

There is the significant case of a fired employee who had a family to support and who, in an act of despair, tried to tamper with an ammonia facility at one of the plants. Once again we were lucky: He could not cope with a corroded valve.

Especially Dangerous Plants
(According to an Internal Study by the State Inspectorate for Environmental Protection)

1. Oswiecim Chemical Works in Oswiecim
2. Nitrogen Works in Chorzow
3. Nitrogen Works in Tarnow
4. Blachownia Chemical Plant in Kedzierzyn
5. Kedzierzyn Nitrogen Works in Kedzierzyn
6. Pulawy Nitrogen Works in Pulawy
7. Wloclawek Nitrogen Works in Wloclawek
8. Silesian Refinery
9. Gdansk Refinery
10. Mazowsze Refinery and Petrochemical Plant in Plock

11. Subcarpathian Refinery named after I. Lukasiewicz in Jaslo
12. Organika-Zachem Chemical Plant in Bydgoszcz
13. Organika-Azot Chemical Plant in Jaworzno
14. Organika-Sarzyna Chemical Plant in Nowa Sarzyna
15. Organika-Baruta Dyestuffs Industry Plant in Zgierz
16. Odra "Organika-Rokita" Organic Industry Plant in Brzeg Dolny
17. Organika-Benzyl Chemical Plant in Skarzysko Kamienna
18. Poznan Phosphorous Fertilizers Plant in Lubon near Poznan
19. Chemitex-Elana Chemical Fibers Plant in Torun
20. Chemitex-Anilana Chemical Fibers Plant in Lodz
21. Chemitex-Celwiskoza Chemical Fibers Plant in Jelenia Gora
22. Chemitex-Wistom Chemical Fibers Plant in Tomaszow Mazowiecki
23. Grodzisk Polfa Pharmaceutical Plant in Grodzisk Mazowiecki
24. Starogard Polfa Pharmaceutical Plant in Starogard Gdanski
25. Tarchomin Polfa Pharmaceutical Plant in Tarchomin, Warsaw
26. Police Chemical Plant in Police near Szczecin
27. Tarnowskie Gory Chemical Plant in Tarnowskie Gory
28. Alwernia Chemical Plant in Kwaczal
29. Petroleum Products Center in Warsaw
30. Siarkopol Sulfur Mine in Grzybow
31. Lower Silesian Organika Chemical Plant in Zarow
32. Metalchem Chemical Equipment Plant in Zarow
33. Pabianice Polfa Pharmaceutical Plant in Pabianice
34. Kutno Polfa Pharmaceutical Plant in Kutno
35. Warsaw Polfa Pharmaceutical Plant in Warsaw
36. Chemitex-Stilon Chemical Fibers Plant in Gorzow
37. Chemitex-Wiskord Chemical Fibers Plant in Szczecin
38. Chodakow Chemitex Chemical Fibers Plant in Sochaczew
39. WRoclaw Chemitex Chemical Fibers Plant in Wroclaw
40. Pulp and Paper Plant in Swiec-on-the-Vistula
41. Pulp and Paper Plant in Wloclawek
42. Pulp and Paper Plant in Kwidzyn
43. Kostrzyn Papermaking Works in Kostrzyn Odrzanski
44. Kalety Pulp and Paper Plant in Kalety
45. Niedomice Papermaking Works in Niedomice
46. Papermaking Works in Krapkowice
47. Petroleum Pipeline Maintenance Enterprise in Plock
48. Marine Cargo Port in Gdynia

TRINIDAD AND TOBAGO

Japanese Embassy Issues Statement on Plutonium Shipment

FL2310234692 Bridgetown CANA in English 2147 GMT 23 Oct 92

[Text] Port of Spain, Trinidad, Oct 23 (CANA)—Following is the partial text of a statement on a planned shipment of plutonium released by the Japanese Embassy in Port of Spain.

Multiple measures taken to secure the safe and reliable shipment of plutonium:

(1) High safety transport ship:

The ship which will be used for the transportation of plutonium has been used to transport more than 5,000 tonnes of spent nuclear fuel safely, in more than 100 trips from Japan to Europe. It was built specifically for transporting plutonium. Therefore, a transport ship of highest safety, compared with other ordinary cargo ships, is being used for the shipment of plutonium.

Additionally, the plutonium is sealed up in casks which meet or exceed all international standards and guidelines for transportation safety. Therefore, there is almost no possibility that the shipment would be a threat to the marine environment.

(2) Security and safety measures taken to avoid an accident during shipment:

(a) Selection of the highest safety route. Several routes are being considered, one of which will be chosen just before departure under the total consideration of natural surroundings, political and social situations, sea traffic conditions, etc.

(b) Equipped with multiple collision prevention systems. To avoid any accident, the ship is equipped with satellite navigation systems and anti-collision radar, etc, for highly reliable and precise navigation. An armed escort vessel highly capable of continuously monitoring the neighbouring sea area will accompany the transport ship.

(c) Ship structured to prevent sinking. The ship, being double hulled, is damage-resistant in a collision, crash or grounding, and has a high stability, enough to sustain itself afloat against damages by which sea water could come into the holds or other parts of the ship.

(d) Measures against a fire accident. The ship is equipped with a fire alarm system, redundant pumps, and CO2 fire suppression system for early detection and fire prevention. The ship also has a fireproof structure to prevent the spread of fire. There are no flammable materials on board the ship. Therefore, it is very unlikely that any accident exceeding the safety standards established by the IAEA [International Atomic Energy Agency] (800o c, 30 minutes) will occur.

(e) Casks which meet or exceed all international standards and guidelines for transportation safety. The shipping casks have been tested to demonstrate leak-tightness in water. to a depth of 10,000 meters (the depth of 99.999 per cent of the sea in the world is less than 10,000 meters). No distortion of the cask was observed under pressure equivalent to that of a depth of 10,000 meters of water, in 20 minutes. Therefore, cask distortion does not develop in that timeframe. The material of which the cask is made is stainless steel, completely corrosion resistant. Therefore, sealed casks can have a lifespan of more than 10 years in the sea. As the cargo is equipped with transmitting signal equipment which works effectively for five years, the cargo can always be traced anywhere.

(3) Physical protection system:

A patrol boat of the Japanese Maritime Safety Agency is accompanying the transport ship as an escort vessel under the guidelines of the U.S./Japan Nuclear Cooperation Agreement. Also, as a physical protection, the following measures have been taken: a derrick of the ship has been removed, a hatch is not operative, there is a monitoring system for the ship and the cargo at the operation centre, double systems for correspondence, and armed guards on board the ship.

Route:

(1) The route will not be announced for the protection of the cargo. It means that no information must be given to terrorists to avoid a hijack of the plutonium. From that standpoint, any information concerning the route will not be announced at all. This is the internationally established way. The criticism that Japan is withholding information of the shipment more than is necessary is not true.

(2) Several routes are being considered, one of which will be chosen just before departure after total consideration of the natural surroundings, political and social situation, sea traffic conditions, etc. In other words, the route that will be selected will be one avoiding natural disasters and civil disturbance—the safest route of all.

(3) Japan will basically consider selecting a route so as not to enter an economic zone of 200 sea miles and there will be no scheduled port calls en route from departure to destination.

Toxicity of plutonium:

(1) Plutonium is certainly a material to which close attention must be paid in handling, as its danger lies in its radioactivity. Plutonium produces alpha radiation, but alpha radiation is a weak transmitter to materials and is blocked by a piece of paper. Therefore, even if plutonium conglutinates to the skin, the skin blocks alpha radiation and it is not a serious problem.

(2) However, alpha radiation gives off much energy to a place where it is radiated. For example, if plutonium powder is absorbed and conglutinates to the lung, the cells absorb alpha radiation and there is a possibility of contracting lung cancer. This is the toxicity of plutonium, and it is quite different from the poison of chemical products such as potassium cyanide.

(3) Therefore, plutonium is handled in a special box to avoid the absorption of plutonium by workers. Japan's Power Reactor and Nuclear Fuel Development Corporation is well experienced and has been handling plutonium safely for more than 25 years.

REGIONAL AFFAIRS

Facts, Figures on Pollution in Gulf

92WN0752A Jeddah AL-MADINAH in Arabic 16 Aug 92 p 18

[Text] Dr. 'Abd-al-Bar Bin Al-Qin, chief of the weather and environmental protection administration, and secretary general of the ministerial committee for the environment, declared that the total amount of oil spillage during the liberation war was 11 million barrels. This amount was spilt from eight tankers with a combined tonnage of about 4.3 million barrels. The amount that leaked from refineries and loading stations was 7.1 million barrels.

Precise scientific surveys by both the weather and environmental protection offices and by UN specialized organizations gave estimates that show that oil leaks that reached Gulf waters and affected Saudi Arabia, Qatar, and Iran, amounted to 4.5 million barrels. Of the oil that leaked, 3.1 million barrels sank onto the Arabian Gulf seabed, causing dangerous environmental hazards, affecting fish breeding and other sealife areas, as well as coral reefs. Fishermen in the Arabian Gulf region are still going through difficult times, because most of their catch is polluted by oil.

Currently, scientists with different specializations from Saudi Arabia, Qatar, the United Arab Emirates, Iran, the United States, and Europe are conducting a comprehensive survey of Gulf waters to determine the impact of the Iraqi invasion of our brother Kuwait, on the environment, and ways to deal with it. Those scientists are also studying biological changes resulting from this barbaric invasion of Kuwait. They are analyzing soil, plants, animals, beaches, and coasts that are covered with a layer of oil that destroyed all living things on them. Perhaps one of the most dangerous environmental catastrophes caused by Saddam Husayn's bombing of oil fields has been the increase of carbon dioxide in the atmosphere. Small smoke particles escaping from refinery fires have affected the prevailing climate in the Arab Gulf region. Large quantities of smoke particles have risen to the upper layers of the atmosphere and will continue to linger there for a long time, perhaps up to five years. This will lead to increased acid rain and increased upper atmosphere temperature, as well as the formation of a semi-isolating cloud, for about one year.

This also means that some sunlight will not reach many parts of the world, including the Middle East.

Japanese Study Shows Steady Decline of Gulf Air Pollutants

OW2010091492 Tokyo KYODO in English 0813 GMT 20 Oct 92

[Text] Kitakyushu, Fukuoka Pref., Oct. 20 (KYODO)—The air in the war-struck Persian Gulf area, which was heavily polluted by emissions from burning oil wells, has recovered much quicker than expected, a Japanese research team said Tuesday.

During a study in Saudi Arabia some 60 kilometers from the oil wells concerned, where northwest winds bring air currents from Kuwait, the team found the concentration of sulfur dioxide has already sunk to 10 percent below the limit allowed in Japan.

Likewise the proportion of dust particles in the air and the concentration of benzopyrene, a cancer-producing hydrocarbon found in coal and oil tar, have dropped considerably, said the head of the investigation team, Yasushi Kodama, a professor of hygiene at the University of Occupational and Environmental Health in Kitakyushu, Fukuoka Prefecture.

The results of the study will be presented at a symposium on air pollution in Osaka in December, he said.

The study began in April 1991, when some of the oil wells were still burning, and continued until February this year, three months after the last fires had been extinguished.

Kodama said air pollutants have steadily declined in volume. The researchers recorded the highest sulfur dioxide concentration in April 1991 at 0.175 parts per million (ppm), a concentration 1.75 times higher than the Japanese limit.

The sulfur dioxide concentration sank to the allowed Japanese limit within the following five months and fell 10 percent below this February, Kodama said.

Although the air in the Persian Gulf area has recovered from the war pollution much quicker than expected, it does not mean the pollutants did not have a long-term impact on human beings, Kodama said.

ALGERIA

Algiers Copes With Growing Refuse Problem

93WN0070A Algiers ALGER REPUBLICAIN in French 30 Sep 92 p 6

[Article by Hakima Boussaidane: "1,600 Tons of Refuse Daily"]

[Text] **Visitors and residents of Algiers and its suburbs are confronted by the ugly sight of all manner of refuse: The spilled contents of trash bags lie strewn on the sidewalks and streets and in the stairwells and entrances to buildings, along with the unwanted food from our tables (chorba, couscous, stews, pasta, bread, etc.)**

To state the problem outright, Algiers has been turned into a trash heap. The city is ailing because its residents believe that they can rid themselves of their refuse by tossing it into the streets.

The refuse contaminates the soil. It pollutes and poisons the city's air, landscape, and its nature, only to destroy those who generate the refuse in the first place, the residents.

Just as dangerous is the public dump site at Oued Smar, which stands like a volcano threatening to erupt at any moment. The site is causing a good deal of harm to the population of the surrounding area. Serious illnesses could begin to develop there, if they have not already done so.

The sources of industrial pollution are some 250 plants and complexes that produce more than 360,000 metric tons of toxic waste every year. Across the nation, an estimated 444,738 metric tons of waste were said to be stockpiled as of the end of 1989. At present, nearly 1,600 metric tons of waste are dumped every day at the Oued Smar site.

The Oued Smar dump site dwarfs other sites such as El-Harrach, Bab-Ezzouar, Cite du 5 Juillet, Bachdjarah, Ain-Naadja, and La Glaciere. It is a ghastly place, a threat to the lives of residents.

In other countries, paper, wood, plastic, and metal are recycled and reused by the processing industries. In Algeria, some recycling is being done, but tons of refuse lying in dumps prove that it is still just getting started and that it will take considerable effort to advance the recycling industry. Meanwhile, public health will suffer.

Given this state of affairs, the sanitation department of the city of Algiers is trying as best it can to bring about an improvement. Mr. Belalia, who directs the department, told us, "We are making a great effort to collect household waste from 28 municipalities, 13 of which are not "normally" within our jurisdiction. [quotation marks as published] The department has the use of only 90 trucks for garbage collection. It employs a day shift as well as a night shift.

Mr. Belalia complained that his department lacks the personnel and the means it needs. He also said that he finds it difficult to understand the behavior of some citizens: "We occasionally inspect the streets after the collection trucks make their rounds. We have found that they did a good job but several hours later, the same streets were unrecognizable. They were full of trash."

The plans for the future are "grandiose," Mr. Belalia confided. "We are trying to move the public dump at Oued Smar to an uninhabited area. We also plan to build sites across the country and we are working on expanding our equipment base."

INDIA

Clean Technologies Conference Held in Delhi

93WN0058A Bombay THE TIMES OF INDIA in English 24 Sep 92 p 2

[Text] New Delhi, September 23—Scientists from various countries feel there is greater scope for international co-operation in exchanging environment-friendly technologies.

At a three-day international conference of heads of scientific organisations from various countries, they also discussed the problems hampering free transfer of clean technologies.

The meeting is organised here as part of the golden jubilee celebration of the Council of Scientific and Industrial Research.

A senior scientist from New Zealand said there is considerable expertise available for international cooperation in environmental research. But this is limited by the present institutional arrangements.

Dr Rolf Skaar, chief of the Norwegian Council for Scientific and Industrial Research, said his country would like to share its expertise in production and distribution of non-polluting electricity.

Dr Lu Shaozeng, deputy chief of China's state bureau of technical supervision, blamed industrialised countries for creating global environmental problems.

He stressed the need for greater involvement of industrialised countries in solving environmental problems of poorer nations.

China, he said, was planning to strengthen cooperation with other countries in the areas of environmental protection and energy and resources. It has set up a special committee for this purpose.

A number of inter-nation agencies too are involved in promoting cooperation in research. The Asia Pacific Centre for Transfer of Technology (APCTT) is now involved in the identification and intensive promotion of selected environmentally clean technologies relevant to the region.

A data base on exchange of wastes, and setting up a centre on environmental protection by APCTT is also on the cards.

Earlier, inaugurating the conference at the national physical laboratory, the vice-president, Mr K.R. Narayanan, criticised the countries which are hampering transfer of technologies to developing countries on political grounds.

He said cooperation between nations has become imperative and it is a pity that technology is sometimes denied on various grounds. Mr Narayanan said dual technology

has been cited as grounds for refusal of technology when almost all technology can be regarded as dual or even multipurpose.

Montreal Protocol Will Facilitate Aid Flow

93WN0097A Madras THE HINDU in English 10 Oct 92 p 6

[Text] New Delhi, Oct. 9—With India having signed the Montreal Protocol in June, financial support from the Interim Multilateral Fund established to assist qualified developing countries to meet their incremental costs is very much on the cards.

According to sources, the Indian signature to the protocol which calls for the phasing out of all ozone depleting substances (ODS) will not just require its compliance with the protocol provisions, but will also bring financial support from multilateral agencies.

With the liberalisation programme in the country at its zenith, it was all along expected that before the ink on the Montreal Protocol becomes dry, the multilateral agencies will offer their support to help phase out the Chloro-Fluorocarbons (CFCs).

The cost of the substitutes being high, the Multilateral Fund will help compensate India, to meet the technical and financial costs of switching to substitutes. The resulting costs of transformation and possible abandonment of existing plant and equipment will also be partially met by the fund.

The 14-member executive committee, equally split between the developed and developing countries, will monitor the implementation of operational policies, guidelines and administrative arrangements, and also lend support to implement approved country programmes and activities so that India may phase out the CFCs as early as possible.

The Committee, which has selected three agencies—UNDP, UNEP and the World Bank—for implementing environmental strategies, will now offer their services in the field of partnership between India and other developed countries as also support economic opportunities between and among India's partner countries with greater vigour.

According to these sources, the UNDP which assists governments in the planning, preparation and implementation of country programmes and projects for the replacement and phase-out of CFCs, halons and other ozone depleting substances will provide on-site, in-country technical training and assist pre-investment studies and demonstration projects.

Much on the lines of expectations from other countries, the executive Committee of the Multilateral Fund will also require India to prepare and submit a country programme to facilitate approval and funding of demonstration and investment projects. The UNDP, it is learnt, is ready to support both the preparatory and implementation stages of this exercise.

Bill Setting Up Environment Tribunal Scored

93WN0098A Bombay THE SUNDAY TIMES in English 11 Oct 92 p 22

[Article by Aditi Kapoor: "Public Sector Out of Ambit"]

[Text] New Delhi, Oct 10—The national environment tribunal bill, all set to be passed in the coming session of Parliament, makes an unprecedented division between the public and the private sector in reserving the right to absolve the former of all guilt in the wake of an accident involving hazardous substances.

"The Central government may, by notification, exempt from the operation of this Act... any state government; any corporation-owned or controlled by the Central government or a state government; (and) any local authority." As if this is not enough, the bill especially excludes from the meaning of 'accident' any damage caused by 'radio-activity'!

Presented in the Lok Sabha in August, the bill has attracted a lot of flak from legal experts and environmentalist. The Environment (Protection) Act 1986, does not differentiate between the public and the private sector, they say.

The bill fails to meet its two main objectives spelled out at the start of the document. One, is its promise for comprehensive environment protection: "...decisions were taken at the United Nations conference on environment and development at Rio de Janeiro in June 1992, in which India participated, calling upon the states to develop national laws regarding liability and compensation for the victims of pollution and other environmental damages."

In essence, say legal experts, there is not much difference between this bill and the Public Liability Insurance (PLI) Act. The PLI Act already ensures compensation to victims of "incidents" involving hazardous substances. Further, if the main purpose of an environment tribunal is to protect the environment, it should have the power to try cases under all environment regulating legislations such as the Water and Air Act. They also feel workers should not be excluded as the Workmen's Compensation Act is inadequate.

The need for separate environment courts was first voiced by the supreme court in its judgement dated February 16, 1986 (M. C. Mehta vs Union of India & ors. etc.) in the Shriram gas leak case. The apex court says, "we would also suggest to the government of India that since cases involving issues of environmental pollution, ecological destruction and conflicts over natural resources are increasingly coming up for adjudication and these cases involve assessment and evolution of scientific and technical data, it might be desirable to set up environment courts on a regional basis..."

Victims of pollution and other environmental damages can be compensated only if polluting processes and activities are also curbed, say environmentalists. The bill is silent on polluting processes and activities of industries. "The basic purpose ought to be to prevent degradation and not to wait for an 'accident' to happen," they say.

The bill's other main objective of "effective and expeditious disposal of cases arising from such accidents" is not supported by a set of comprehensive guidelines for deciding the compensation amount and an in-built time frame for adjudging cases. "When the air is being polluted and water sources are getting contaminated the victims cannot spend years waiting for compensation," say environmentalists. "Further, there are no well-defined principles for determining civil liability in cases of environmental damage." The tribunal's relation with the high court should also be explicit in the bill to ensure speedier dispensation of justice, say these critics. Else, every order of the tribunal will be taken up in appeal to the high court.

Legal experts also demand an inbuilt system of legal aid for the poor victims. Plus creation of an environment fund for financing the "independent" tribunal. "Experience shows the rich hardly ever go to jails as they manage to prolong and dilute the litigation process.... moreover, the existing court system is inadequate to deal with issues of environmental protection both because of its procedural complexities and lack of technical knowledge on the part of the judges dealing with these cases."

Legal experts and environmentalists demand setting up of a group of technical persons to assist judges in technical matters. The February 1986 judgement of the apex court was explicit on this: "We would urge... to set up an ecological sciences research group consisting of independent, professionally competent experts in different branches of sciences and technology who would act as information bank for the court and the government departments...."

Tarapur Chemical Plants Faulted for Air Pollution

93WN0096A Bombay THE TIMES OF INDIA in English 14 Oct 92 p 5

[Article by Vidyadhar Date: "Pollution at Tarapur; Chemical Units Main Culprits"]

[Text] Tarapur, October 13—The Maharashtra Industries Development Corporation [MIDC] has cut off water supply to a chemical plant at Tarapur on account of pollution. At Tarapur, usually it is the atomic power plant which is the focus of environmental concern. However, it is not radiation but air pollution caused by chemical plants in the industrial area which affects people's health.

The victims include a large number of employees of the Department of Atomic Energy and the Tarapur Atomic Power Station (TAPS) living in the colonies close to chemical plants and a number of residents of Boisar and Tarapur.

People in the area have been complaining about pollution for years but the Maharashtra Pollution Control Board (MPCB) decided to act only last week at a meeting chaired by Mrs Parvati Parihar.

The board directed the MIDC to cut off water supply to two of the allegedly defaulting units, Zenith Chemicals and Rajprakash Chemicals.

The MIDC has cut off supply to Rajprakash Chemicals, while Zenith is said to have obtained a stay in the matter. The production in Rajprakash has come to a halt and 70 workers have been laid off, a company representative said.

The official said the company had already spent Rs 20 lakhs on pollution control measures and had assured the pollution control board that further measures would be taken by November. However, the board has acted in haste. The official said the company had operational difficulties in checking pollution. The 12-year-old plant is one of the earliest in the Tarapur industrial estate.

The company claimed that it was treating the effluents before discharging them into the local 'nallah.'

Mr D. R. Rasal, member secretary of the MPCB, said mechanical problems caused by frequent power breakdowns added to air pollution in the area.

The environmental survey laboratory of the Department of Atomic Energy has identified the main pollutants as oxides of sulphur, ethyl accrylate and hydrocarbons which are far in excess of permissible limits.

There have been several cases of children fainting and several people complaining of suffocation and irritation of throat and eyes.

There is also an increase in the cases of bronchitis, conjunctivitis, chronic cold and asthma diagnosed at the hospital of TAPS, according to its superintendent, Dr D. B. Mendhekar.

The TAPS employees' association has called for the installation of a siren facility to alert residents as they fear a Bhopal-type disaster.

Mr G. P. D'Cunha, general secretary of the union, said the atomic plant was quite safe and yet a regular emergency drill was held every month according to a well-prepared off-site and on-site plan.

However, the highly hazardous chemical factories had no disaster management plan.

The colonies of DAE and TAPS, each having nearly 750 houses, are most vulnerable as they are close to some chemical units. They fall an easy prey to the pollutants particularly because of the wind direction.

Previously, the factories released the pollutants at night. "But now the situation is worst in the evenings and we cannot sit out in the lawns," complains Mr K. P. Bhat, deputy chief superintendent of TAPS.

It was worse in the last three months as the pollutants descended in larger measure on the colonies because of rain. Dr Mendhekar points to withered trees in his compound as an indication of the havoc caused by pollution. The main polluting units, according to the employees, include Zenith Chemicals, IDI, Gopal Anand and Rajprakash Chemicals.

Mr R. B. Budhiraja, joint secretary of the DAE, has taken up the issue with the pollution board. Other officials have even approached the cabinet secretariat.

The Tarapur Industrial Manufacturers' Association (TIMA) has urged its members to recognise their moral responsibility and avoid a calamity.

Effluent from chemical plants have also created a havoc in neighbouring villages particularly affecting fishing activity.

As a result, various units in the Maharashtra Industrial Development Corporation (MIDC) at Tarapur have come together to set up a common effluent treatment plant, the first of its kind in the state and the second in the country after the one in Hyderabad.

The Industrial Development Bank of India has agreed to give loan at a concessional rate of 15 percent provided the beneficiaries contribute 20 percent equity and the Central and state governments each contribute 20 percent.

However, this would provide relief only in the case of water pollution. The problem of air pollution still remains unsolved.

Disaster management is at a primitive level in the area at present. The pollution control board recently informed the industries in the area that it proposed to carry out an inventory of units handling hazardous substances. The inventory will take into account the mode of disposal of each category of waste by each industry.

Directive Halting Karnataka Power Project Praised

BK0411031092 Delhi INDIAN EXPRESS in English 24 Oct 92 p 8

[Editorial: "Environment Bashing"]

[Text] The effort by the Chief Minister of Karnataka, Mr. S. Bangarappa, to push through the 210-MW Bedthi hydel project is bound to have disastrous consequences. One therefore needs to welcome the Environment Minister, Kamal Nath's directive to the Karnataka Power Corporation to immediately stop work on it. The project does not have a clearance from the Planning Commission, nor has the Environment Ministry given it the green signal afresh after the conditional clearance granted in 1979 had lapsed in 1981-82. Moreover, the Forest Conservation Act of 1980 is being flagrantly violated by the State through diversion of land. The forest department has listed at least six violations. The project has only the State Cabinet's approval. But that, of course, is not enough when it is likely to affect the environment and the lives of thousands of persons living in its vicinity. By going ahead with it, Mr. Bangarappa is displaying flagrant contempt for established procedures. He needs to be told that this is no bash that he could organise and get away with by spending from the state exchequer. The project raises wider issues, and unless these are sorted out, the State cannot unilaterally go ahead with the construction.

Mr. Kamal Nath has assured three former Chief Ministers of Karnataka, Mr. Ramakrishna Hegde, Mr. Gundu Rao and Mr. S. R. Bommai, who met him on Thursday, that he would take whatever legal steps were required to stop the construction activities at the project site. He could hardly have done otherwise. It is rare that any project is taken up with such a callous disregard for the rules. Also, since the Congress and the Bharatiya Janata Party (BJP) have both opposed the construction, taking a popular stand is not too difficult for a minister. Nevertheless, his strong stand deserves to be supported; a Chief Minister like Bangarappa does not easily listen to reason. At the same time, the former Chief Ministers, including Mr. Hegde, cannot absolve themselves of the responsibility of the project going ahead under the new dispensation. Mr. Hegde said that all three of them were against the revival of the project. But when he was in power, he did precious little to see that the project was shelved, a demand he is so ardently making today.

However, apart from the stand taken by such politicians, what is required today is a directive from no less than the Prime Minister to the Karnataka Chief Minister that he must not go ahead with the project. Mr. Narasimha Rao's silence during the anniversary bash in Bangalore was bad enough. It should not be compounded by indecisiveness on a subject which is far more important. The non- governmental organisations have pointed out that 6,800 hectares of forest land and 488 hectares of paddy fields would be submerged, affecting the livelihood of thousands of tribals and others, if work on the project is allowed to go ahead. It is up to the Centre to see that such a decision does not come through a fiat by the State Government.

Safety of Kakrapar Nuclear Power Plant Questioned

93WN0059A Bombay THE TIMES OF INDIA in English 30 Sep 92 pp 1, 3

[Article by Naresh Fernandes]

[Text] Kakrapar, (Gujarat) September 29—Despite fervid reassurances by officials of the Nuclear Power Corporation (NPC), a few residents in the vicinity of

Kakrapar atomic power project (KAPP) remain sceptical about the plant's safety systems.

The controversy has grown with the first unit of the plant, which is situated about 80 km from Surat, having attained criticality on September 3.

Naryanbhai Desai, the son of Mahatma Gandhi's secretary, Mahadev Desai, went on a five-day fast last fortnight to express his "anguish at witnessing the apathy of the nuclearcrats regarding the safety of the people around Kakrapar" and as "an act of prayer, hoping that there will never be an accident and that better sense will prevail."

On September 11, 250 people undertook a one-day fast to register their protest. Street-plays and discussions held during the period were "well received," said the organisers.

Dr Sanghamitra Gadekar of Anumukti, an anti-nuclear organisation based in Vedchhi, 25 km from the Kakrapar plant, is among those who refuse to accept the NPC version. "We are not satisfied that the safety norms laid down by the International Atomic Energy Agency are being followed," she said.

Anumukti activists are especially disparaging of the manner in which tests were conducted on the plant's emergency core cooling system (ECCS).

This system comes into operation during a loss of coolant accident and its failure could lead to a core meltdown. Dr Gadekar maintained that the catastrophes at Chernobyl, in the former Soviet Union, and at Three Mile Island, in the United States, were the result of ECCS failures.

Mr A. Krishnan, KAPP project director, dismissed these fears as baseless. "Complete testing was carried in a most meticulous fashion" in the first week of February, he stated, including a heavy water injection test, a light water injection test and a long-term re-circulation test.

On February 8, before the addition of heavy water or the loading of fuel into the core, a loss of coolant accident was simulated as part of an integrated test designed to check the working of the ECCS, Mr Krishnan said. Commissioning defects observed in the instrumentation were corrected, and the operation of these components was retested on June 25, June 30 and August 13.

While Dr Gadekar of Anumukti maintained that the entire integrated test should have been rerun, Mr Krishnan claimed that the flaws were too minor to warrant the exercise being conducted again.

Besides, he emphasised that the possibility of the ECCS ever being utilised is "extremely remote."

As the last-line safety barrier, it would be activated only in the event of a failure of both the primary shutdown system (which uses cadmium shut-off rods to render the reactor subcritical) and the secondary shutdown system (which uses lithium pentaborate to "poison" the heavy water moderator).

KAPP is a CANDU-type (Canadian-deuterium-uranium) reactor, which the Massachusetts Institute of Technology's TECHNOLOGICAL REVIEW described as the "closest operating relative of the Chernobyl reactor on the basis of shared design fault." Mr Krishnan ruled out the possible occurrence of an accident in which the reactor accelerates in case of a coolant leak.

This condition, to which CANDU reactors are susceptible, cannot take place in a pressurised heavy water reactor, he said, adding, "Our design philosophy is to be fail safe. We have planned for automatic shutdown should any problem arise."

He also denied the possibility of any seismic activity in the area, though Anumukti activists have said that Ukai lake, from which KAPP receives its light water supply, lies "dangerously close" to the Bharuch fault.

The emergency preparedness plan formulated by KAPP authorities and the district administration in the wake of the Bhopal gas disaster has also drawn flak.

The plan envisages the evacuation of victims among the 180,000 people living in the 16-km sensitivity zone in case of "an accident involving the release of radioactivity into the environment."

Dr Gadekar pointed out that this evacuation procedure presupposes the presence of motorable roads to all the villages in the area. "But these simply do not exist," she said. "They should have been constructed before the plant was built." She also maintained that few villagers are aware of the contingency measures.

On August 11, a dry run was conducted, covering three villages with a total population of about 5,000. However, no residents were physically transported to the shelters.

Instead, as the KAPP chief project engineer, Mr. T.B. Vyas affirmed, it only tested "reaction times" and the communication systems.

Anumukti activists are apprehensive about the safety of tritium, which KAPP routinely emits into the atmosphere. Mr Krishnan stated that the emission levels are routinely monitored. "Anyway, tritium has a half-life of only 12 days, and should you breathe it, it will pass out of the body after that period," he claimed.

Dr Gadekar did not agree. "Tritium is extremely toxic. Our bodies cannot distinguish between hydrogen and tritium atoms when it gets mixed with water. While tritium has a biological half-life of 12 days, it has a physical half-life of 12.26 years," she said. "There is a chance that it may get organically bound and cause great damage. It's not as harmless as they think."

The 220 MW KAPP-1, which went critical on September 3, is expected to begin power production around Divali.

Mr Krishnan said. It will be linked to the western grid and will supply electricity to Gujarat, Maharashtra, Goa and Madhya Pradesh.

He admitted that less than 15 per cent of the NPC's budget has been passed this year, but added that work on KAPP-2 has not been affected. The unit is expected to go critical next year.

The estimated cost of the two units, which have a life expectancy of around 30 years, is around Rs 1,084 crores. This works out to an investment of Rs 2.5 crores per megawatt, as compared to Rs 1.5 crore per megawatt of hydel electricity.

Sources however maintained that this figure is "ridiculously low" and attributed it to "fudgy accounting procedures."

For instance, these sources said that heavy water, which is used both as a coolant and as a moderator, is not shown as a major cost because it is leased from the Heavy Water Board. Mr Vyas confirmed that this was the standard practice.

While NPC officials stated that heavy water costs Rs 10,000 per litre, Heavy Water Board sources, who declined to be identified, revealed that the cost per litre could be several times higher. Each KAPP unit is loaded with 80 tonnes of the substance, Mr Krishnan said. He added that heavy water losses have been estimated at seven to eight tonnes per year. The heavy water upgradation plant at KAPP will not become operational till next year.

Mr Krishnan predicted that the Kakrapar units will be among the most efficient in the country. "We have the experience of all the previous projects to draw from," he said. "This is a very safe reactor. We have added every possible safety input. We have studied the reports of Three Mile Island and Chernobyl and taken lessons."

Thorium Used as Fuel in Kakrapar Nuclear Plant

BK0911021692 Delhi INDIAN EXPRESS in English 31 Oct 92 p 3

[Text] Bombay—For the first time the Bhabha Atomic Research Centre (BARC) has tapped the vast thorium resources in the country by using it as fuel for the initial core of a Pressurised Heavy Water Reactor (PHWR) at the Kakrapar Atomic Power Station-I, which went critical recently.

Stating this in his Founder's Day address at the BARC complex at Trombay here on Friday, the BARC chairman Dr. R Chidambaram said that the thorium bundles used would help achieve an "efficient power-flattening".

He pointed out that the loading of thorium into the power reactor would give valuable experience in the large-scale handling of the substance "which is going to play a major role in the Indian nuclear power programme in the future."

Dr. Chidambaram said that BARC was desig ing an advanced heavy water reactor system where inherent safety was derived through in-built neutronic and thermal hydraulic characteristics. "In this reactor a major fraction of energy would be extracted from thorium with minimum consumption of the plutonium driver fuel", he explained.

In the context of improved safety designs, he said that an Advanced Channel Inspection System (BARCIS) had been used in Pressure Heavy Water Reactors for in-service inspection of coolant channels enhancing the safety and reliability performance of the reactor.

A high-speed processing supercomputer has been made by BARC, using indigenous hardware. "The computer is one-fifth as fast as Cray and we are hoping to further increase the speed. This is a very significant breakthrough in the development of supercomputing systems and meets the high speed computing needs of scientists and engineers here and in other R&D [Research and Development] institutions in the country."

The development of an alternative to the power-pellet route in the form of the Sol-Gel-Microsphere Pelletisation process for the fabrication of nuclear fuel of oxide, monocarbide and mononitride has eliminated radioactive dust hazards, noted Dr. Chidambaram. He said that the process was highly suitable for remote and automated fabrication, thus bringing down the personnel radiation exposure to a minimum.

This year saw the commissioning of a 'Sludge Hygenisation Research Irradiator' at Baroda for the cleaning of city sewage sludge. The first project of its kind in the continent, the experimental nuclear sewage reatment plant will treat half the waste of Baroda Municipal Corporation at full capacity. Its efficacy will determine whether the project will be extended to other cities in the country.

The Centre has also developed an aerial gamma spectrometry system to assess the deposition and dispersion of radioactive material over wide areas. "The system was used by the Rajasthan Atomic Power Station and establishes our capability to quickly assess and map radioactive contamination over large areas," remarked Dr. Chidambaram.

Based on the technology provided by the BARC, he said that a few thyristor chopper systems for the control of electric multiple units (EMUs) of suburban trains had been fabricated and handed over to the Railways. The use of the equipment enables smooth and efficient speed control of suburban trains resulting in a saving of about 25 percent—i.e. 66 million units of electricity per year by the Central Railways alone—of the total energy consumption.

Elaborating on the non-power applications of nuclear energy, Dr. Chidambaram said they they had developed high-yielding varieties of ground-nut and black gram which had been released for cultivation in parts of Gujarat Maharashtra, Bihar and Madhya Pradesh.

Atomic Energy Commission chairman Dr. P. K Iyengar, whose message on the occasion was read out, as he was held up in Delhi, urged scientists to innovate more modern methods to ensure economic growth.

"While scientists may not like to attach importance to the economic principles which influence social progress, we have to accept the fact that these changes ultimately decide the pattern of growth and have a bearing on the development of science and technolgy itself," he observed.

He felt that scientists should not merely copy principles and experiences of other countries which, he said, often operated under totally different conditions.

ISRAEL

European Firm To Check Feasibility of Northern Water Canal

TA0111202892 Jerusalem Israel Television Network in Hebrew 1900 GMT 1 Nov 92

[Text] A large European engineering firm has undertaken to complete a feasibility study of the northern canal project within a year. Our Arab affairs correspondent Ehud Ya'ari reports that an agreement to this effect was signed over the weekend. According to the plan drafted by Engineer Shlomo Gur, water would flow from the Mediterranean Sea in the 'Atlit area through the valleys to Bet She'an, where a desalination plant would be established.

The European firm will invest $2 million to check the feasibility of desalinating 800 million cubic meters of water in the Jordan Rift Valley in order to bolster Israel's and Jordan's water resources and to flow water to the Jordan River so as to stabilize the water level of Lake Tiberias. The feasibility study will also encompass environmental aspects. The Jordanian Government has for some time been aware of the plan, which is now being examined by Israeli Government officials.

RUSSIA

Article Reveals Details of Chemical Weapons Production

MK3010113592 Moscow NEZAVISIMAYA GAZETA in Russian 30 Oct 92 pp 1, 2

[Article by Lev Fedorov and Vil Mirzayanov under the "Environment" rubric: "We Waged Chemical Warfare on Our Own Territory: Article Confiscated From ARGUMENTY I FAKTY Editorial Office"]

[Text] **The text published below was confiscated by Russian Security Ministry staffers from the ARGUMENTY I FAKTY editorial office. This was because one of the authors, Vil Mirzayanov, has been arrested by the ministry and accused of disclosing a state secret (see NEZAVISIMAYA GAZETA Nos. 205 and 206).**

While following our principle of providing a platform to anyone who cannot speak out elsewhere, NEZAVISIMAYA GAZETA hopes, nevertheless, that the information about damage caused our own people by chemical weapons supposed—so the military claimed—to defend them does not constitute a state secret.

The first stage of the long military chemical marathon is over. We were ready for chemical warfare, but a question that will not be superfluous is this: Exactly why were we dragged into this adventure? In order to deter the probable enemy, according to the chief of Chemical Troops, who failed to spot the clear illogic that it is difficult to intimidate people with weapons the existence of which you deny, as we did for many years. Sometimes there were elegant attempts to reduce chemical weapons merely to toxins planned for battlefield use somewhere a long way from our borders. We would like to warn people against this simple substitution, especially as the Geneva Protocol, which we signed in 1925, does not provide for the use of chemical weapons for offensive purposes. Our goals were related to our revolutionary shamelessness. Back in 1921 our deeply revered military leader, M. Tukhachevskiy, used chemical weapons to kill insurgent Tambov peasants. The last case was the use of chemical weapons in the spring of 1989 in Tbilisi: the CS riot control gas.

One general wrote recently: "At various times chemical weapons were produced in Russia in Berezniki, Chapayevsk, Dzerzhinsk in Gorkiy Oblast, Novocheboksarsk, and Volgograd." The revelation is belated and less than complete. It makes no mention of herbicide weapons from Ufa, psychotropic substances from Volsk, or riot control gas from Slavgorod. The capital was left out of the list of producers, too. For your information, before and after the war a factory, which produced the vesicant toxins mustard gas and lewisite, operated on the territory of the State Union Research Institute of Organic Chemistry and Technology. They were poured from teapots and tested on people: prisoners. During the October panic of 1941 the existing stock of toxins—tonnes of it—was buried on the spot and forgotten.

During the history of the military-industrial complex each branch has had its troubles: Rocket scientists had the deaths of cosmonauts and marshals, nuclear scientists had the explosions at Chelyabinsk's "Mayak" plant and in Chernobyl, shipbuilders had the loss of the Komsomolets. What about the military chemical complex? The official story is that "not even the slightest accident or emergency took place" at chemical weapons production plants in Russia. We will confine ourselves to doubts specifically regarding the production of highly poisonous phosphorus-based neuroparalytic toxins: Sarin, soman, and VX. The technologies were developed in Moscow at the State Union Research Institute of Organic Chemistry and Technology, and additional work was done in the institute's subsidiaries. The toxins themselves were tested primarily at Shikhany (Saratov Oblast) and were produced at the "Khimproms": the giant plants in Volgograd (sarin and soman) and Novocheboksarsk (VX). Soman was produced prior to and for at least two years after 1987, when M. Gorbachev announced a halt to toxin production. Sometimes the decontamination measures to remove phosphorus-based toxins from the waste at Shop No. 34 of Volgograd's "Khimprom" plant were not effective: The content of sarin and soman in effluent from the production unit was hundreds of times the maximum permissible concentration. This effluent was disguised among general effluent and discharged into the so-called "white sea" adjoining residential areas of Volgograd. During the spring flood of 1964 this "sea" overflowed its banks and reached the Volga itself. Residents recall the consequences with a shudder: The entire surface of the Volga, as far as Astrakhan, was white with dead fish. The problems of cause and effect were solved easily: the chief engineer was stripped of the Lenin Prize he had received for starting up production of the phosphorus-based toxins. This was not the only event, but to this day residents do not know the real causes.

Novocheboksarsk's "Khimprom" plant firmly led the USSR in the production of chemical output. The fire that took place in 1974 in its Shop No. 83 was a large-scale environmental crime the consequences of which were covered up and still have not been eliminated. This secret shop produced the most powerful phosphorus-based toxin: VX gas. So much for the absence of accidents at the flagship enterprises of the secret chemical industry.

According to official figures, Russia has 30,000 tonnes of phosphorus-based toxins. The remaining 10,000 tonnes (out of the declared 40,000 tonnes), including 7,000 tonnes of lewisite, according to General Petrov, constituted "our stocks of chemical weapons accumulated in the prewar years and during the war," although the production of lewisite and mustard gas in Dzerzhinsk was scarcely possible before the end of the war and the appearance of the spoils of war. The absence of mustard gas is astonishing: There is a small quantity of mustard gas-lewisite mixture, but there is no place for mustard gas itself in the declared tonnage. It remains unclear

what the workers of the Chapayevsk chemical fertilizers plant were doing from 1941, when they began to receive chlorine (without which it is impossible to produce mustard gas), until the end of the forties. Most of the workers have died, but the survivors remember hellish labor that culminated in the production of 10,000-15,000 tonnes of mustard gas and was rewarded with 62 Orders of Lenin. The "Kaprolaktam" plant in Dzerzhinsk also produced mustard gas for many years, with great productivity, otherwise there would have been no point in shipping the plant from Germany as spoils of war.

So although Russia was no laggard in terms of mustard gas production, when the cards were laid on the table there was no sign of it. Where has it mysteriously vanished to? Residents of rayons adjoining Chapayevsk recall how mustard gas was buried in the ground. They also remember mustard gas being dumped in the White Sea and the Pacific Ocean, and what people were unable to find out, starfish recalled a couple of years ago. Chemical munitions that had "sprung a leak" were destroyed without any precautions at a small station not far from Nizhniy Novgorod. There was also another dirty episode. In an attempt to make use of [utilizatsiya] lewisite and mustard gas in the mid-1980's, it was simply burned in Udmurtia. It was the usual story: The population simply knew nothing about this.

Before the start of serious talks about chemical disarmament our military, according to their own figures, destroyed 438 tonnes of toxins. That is untrue; several tens of thousands of tonnes were destroyed. You need only compare the figure for total stocks circulating in the military-chemical underground before the start of the disarmament process (between 50,000 and 70,000 tonnes) with the figure that has been announced officially. The difference is no joke.

In April 1991 Mikhail Sergeyevich crowned a "group of comrades" with the laurels of secret Lenin Prize winners for developing our own, at the time Soviet, binary weapons and for organizing the industrial production of them (at "Khimprom" in Volgograd). This was not the first lie (after 1987 he promised not to produce anything, still less an experimental industrial batch of a new toxin, without which no prizes are awarded) and not the last. However, the new toxin does not feature on any of the lists recently agreed on at the Geneva talks on chemical disarmament, nor has agreement been reached on methods of detecting it.

You would think that "conventional" concerns regarding chemical disarmament ought to find some place for the people who lived and still live near plants for the production of toxins, storage bases, and sites where they will be destroyed in the future, but the reality is rather more grim. Residents of Dzerzhinsk knew nothing of their toxins, but all of a sudden they have been notified that the dismantling of units for the production of lewisite and mustard gas is beginning at the "Kaprolaktam" plant (residents of Chapayevsk were not told even this). It is clear why the dismantling has started only now: The units were being held in reserve, like an armored train. There is another side to this matter, however: The lewisite is long gone—it is at storage bases in Kambarka (Udmurtia) and Gornyy (Saratov Oblast)—but it remains unclear just where there have been discharges of organic arsenic substances, which is what lewisite is. City Nature Conservation Chief A. Pilyugin says not a word about them, although there was pollution of the atmosphere, and to a still greater extent, discharges of effluent (in Dzerzhinsk effluent is discharged not only into the Oka, but also is pumped underground). The soil at and around the plant must be contaminated with arsenic compounds, which are immortal; they live their lives, some persist, and others change from one form into another, but each new form is toxic. It now transpires that for decades the residents of Dzerzhinsk (and with them those of Chapayevsk and Moscow) knew nothing of their misfortune. We are embarking on the path of chemical disarmament, but no one is proposing that we take a retrospective look at the real pollution of the cities that were involuntary participants in the criminal venture: Volgograd, Novocheboksarsk, Chapayevsk, Ufa, Dzerzhinsk, Berezniki, Volsk, and Moscow. The Americans do not care about the consequences of the many years of activity by the generals of the military-chemical complex in our country, and the generals do not even think of settling accounts with the past. So it is pointless to raise the question of the environmental friendliness of the military-chemical complex's activity until we learn the full truth about polluted Russian soil, mostly in the Volga basin.

Recently we were brought from across the ocean a U.S. promise to allocate dollars to "evaluate the potential for switching one of the chemical plants formerly engaged in producing toxins over to their destruction." Apparently expenditure will decrease, reliability will increase, and so forth. Let us make a parenthetical note: The reference is to Novocheboksarsk, which sprang up around the giant "Khimprom" plant and forms essentially a single whole with the capital of Chuvashia. There is no chance of simply getting away with this.

Neither is the question of storage a simple one. Of course, unlike mustard gas and lewisite, it would be safer to store phosphorus-based toxins in munitions, but that is from the technical viewpoint only. What can we do with the awful memories of the destruction of military storage facilities in Armenia and the Far East? We need only extrapolate them to our powerful storage bases for toxins, of which we have at least seven and about which we know nothing.

The hardest question is the fate of the lewisite. The Americans withdrew lewisite from service before the end of World War II, and the Germans never produced it at all. In the mid-1980's, however, we had to consider what to do with this stuff. Here is what General I. Yevstafyev says about lewisite: "We always fought with the 'beloved' Ministry of the Chemical and Petrochemical Industry to

ensure that raw materials were not destroyed thoughtlessly. This is simply terrible from the environmental viewpoint. Each tonne of lewisite produces nine tonnes of waste that have to be buried." The general is being less than straight: Until 1988 there was no alternative, and after fusion [splavleniye] it was proposed to bury all the lewisite in the heart of Russia, within the watershed of rivers flowing south and to the northern seas. Some of the few people who opposed this, and who got into trouble with the military-industrial complex and the KGB, were in uniform; others were not.

It now transpires that Udmurtia is a major "deposit" of arsenic and the destruction of lewisite will be self-financing and will not require money from the state budget. This is wonderful, but untrue: At present there are no environmentally safe techniques for destroying lewisite; neither is there any prospect of cost recovery. The lewisite arsenic is a dead end, and when we see on TV an interview with the leaders of Udmurtia and Saratov Oblast against the backdrop of American equipment for the destruction of toxins, it is useful to remember that the equipment was not designed to deal with lewisite.

The conclusion is obvious: For a start we must see for ourselves that there are no phosphorus-based toxins from the past in the environment of Novocheboksarsk and Volgograd, nor forgotten quantities of mustard gas, lewisite, and their breakdown products in Chapayevsk, Dzerzhinsk, and Moscow. Then all this should be eliminated. Only then will it be time for chemical disarmament programs.

Ecology Minister Foresees Greater Funding, Influence

93WN0049A Moscow DELOVOY MIR in Russian 11 Sep 92 pp 9, 11

[Interview with Viktor Danilov-Danilyan, minister of ecology of Russia, by Feliks Rossels and Petr Deynichenko, RADIKAL correspondents; place and date not given: "The Minister of Ecology: You Cannot Clean Up Without Our Help"]

[Text] **The years of socialist construction cost nature in Russia a great deal. At best, it was "subjugated" over the course of several decades. In the last years of "stagnation," the ecological situation got worse not by the day, but by the hour. Perhaps we were rescued from a large-scale catastrophe only by the immense territory and by the amazingly "timely" industrial slump that got under way.... Of course, we will not forget that a lot was also done during all of these years to save the environment as well, but this was frequently done in spite of official policy, and on such a modest scale that there was just enough not to let the environment "die" once and for all.**

A new powerful organ has appeared in the executive authority structure—the Ministry of Ecology—which is called upon to protect and to preserve the environment we live in and to make good use of nature and the natural resources of the Russian Federation. Is the new department really capable of influencing the situation? What are its capabilities, especially now, under conditions of an economic crisis?

Viktor Danilov-Danilyan, the minister of ecology of Russia, kindly agreed to answer the questions of RADIKAL correspondents.

What real levers of influence does the ministry have today on enterprises that pollute the environment? Where do the resources come from to conduct environmental protection measures?

[Viktor Danilov-Danilyan] The financial capabilities of the ministry are being strengthened today. The main source is money that is being collected for polluting the environment. In 1991, more than 4 billion rubles [R] in all was charged for polluting the environment. Half of this sum was left to enterprises for the implementation of environmental protection measures. Even a corresponding bill was not presented. A billion—in hard cash—was collected, confiscated, but, in addition, we presented a bill in the sum of about a billion that has not been paid yet—the enterprises are stuck with uncollected debts. We, however, do not intend to write off these debts.

In 1993, the procedure for payments for polluting the environment will be different. The government adopted a decree on this at the very end of August. It discusses all types of pollution, including discharges into the atmosphere, sewage runoff, and waste disposal. The new decree establishes: All of the enterprises that will be put into operation starting in 1993 must pay for pollution only from profits.

[Correspondent] But if there are no profits?

[Danilov-Danilyan] Then we have the right to raise the question of an enterprise's existence. This procedure has not been worked out yet, but the government is already engaged now in the formation of about 10 sanitation commissions, which will decide the fate of enterprises in accordance with the findings on their activity. Each of these commissions will have representatives from the Ministry of Ecology, and the environmental protection factor will be one of the priorities in deciding the fate of an enterprise.

[Correspondent] But what will happen to monopolistic enterprises?

[Danilov-Danilyan] The monopolists, you know, are not sitting without profits. Of course, they can be stuck with uncollected debts and not physically receive this profit because of nonpayments. But this problem can be resolved. In any case, it is to a great degree within the jurisdiction of the Antimonopoly Committee....

We will return to the payments procedure. Thus, enterprises that are put into operation starting in 1993 will pay from profits. As for existing enterprises, including those that will go into operation before 1 January 1993,

they will have to pay normative payments from production costs, but those above norms—from profits. Normative payments are for planned permissible wastes; that is, the kinds of wastes that can be reduced only by replacing equipment, or by switching to another technology. Here, we are meeting enterprises halfway—first, there is an investment crisis in the country today, and, second, replacement of equipment will require time. Sometimes it is simply impossible within any acceptable period, or because of that same monopolism. For example, an enterprise cannot build a new shop on a new site, because there is no site, and for the sake of construction it is necessary to stop production altogether. Therefore, we think that old enterprises pollute the environment "through inheritance" and that they can pay for this pollution out of production costs. This is not a fine, but to put it bluntly, compensation at the expense of the consumers of its product for that which the product damages. But the above-norm wastes of an enterprise will be paid from profits and according to other fine rates.

[Correspondent] Where do these resources go, and how are they used?

[Danilov-Danilyan] Rather frequently, we leave the resources that are collected as payments for pollution of the environment with the enterprises themselves. An enterprise is supposed to submit to us a plan of environmental protection measures, the execution of which is subsequently monitored. That money which we take is divided between the budget—10 percent of the resources go there—and the environmental protection fund. Thus, the environmental protection fund receives 90 percent. In turn, 10 percent of these resources goes to the federal fund, 30 percent—to the environmental protection fund of the subjects of the federation (oblasts, krays, and republics of the federation), and 60 percent—to local funds.

[Correspondent] But how does the Ministry of Ecology finance the territorial environmental protection organs?

[Danilov-Danilyan] The Ministry of Ecology is financed from the state budget—like all central departments. But, starting on 1 January 1993, the environmental protection organs in the field must maintain themselves on the 10-percent payments for pollution that are received in the budget. Up until 1991, inclusive, all of our territorial network was maintained by the federal budget. In 1992, in connection with the extremely strict policy of the government to reduce the budget deficit, they were transferred temporarily to local budgets for support. It is clear that this was not enough, and resources had to be borrowed from the economic funds. Starting in 1993, they will be returned to the state budget, where there is a special article now—that same 10 percent. Our calculations show that this sum exceeds needs. There is only the problem of an advancement for the starting period—after all, wages have to be paid until appropriate resources are received. However, Yegor Timurevich has resolved this question.

[Correspondent] What are the territorial environmental protection organs? What rights do they have?

[Danilov-Danilyan] In the oblasts and krays, this usually is an environmental protection committee, or a committee on ecology and natural resources. In the republics, it is a ministry or a committee. The staff of such an organization is usually 70 to 300 persons—it depends on specific conditions. The structure of the territorial organs, with modifications, is a reproduction of the structure of the ministry, but their main function is inspection. Direct monitoring of the condition of the environment.

[Correspondent] What is the material base of these organs?

[Danilov-Danilyan] Unfortunately, it is obviously inadequate. In order to create a decent material base, capital investments are necessary. The question on investments has been resolved now in principle, and they will be identified in the budget with a separate line.... But you yourself know: Everyone today receives 20-40 percent of what is necessary.

[Correspondent] If you succeed in receiving even that much, that is probably a real technical revolution in your field....

[Danilov-Danilyan] Indeed, we are hoping for this. The priority of environmental protection problems today is recognized by everyone. It is fixed in documents concerning structural policy for the next three years. Therefore, I hope that we will receive at least as much as we received previously, in portions.

But it is not just a matter of money, but also what this money can buy. By no means all of the equipment that is needed is produced in our country, and by no means everything can be bought with rubles. Because of this, we are not in a position to monitor the contents of many pollutants properly. For example, it is very difficult to monitor the presence of dioxin in water. The analysis of only one test in 1991 prices cost R25,000. In Russia, those who make such tests can be counted on one's fingers. Therefore, it is not always worth trusting reports about dioxin poisoning. Perhaps it was dioxin, of course, but to verify this, given the present instrumental base, is incredibly difficult. We do not even have a special laboratory on dioxin.

[Correspondent] But how many such tests are conducted in other countries?

[Danilov-Danilyan] In Germany, for example, the Frezenius Institute is in a position to make as many analyses as are paid for.

[Correspondent] Is it only a matter of payment in our country also?

[Danilov-Danilyan] That is precisely the problem, no! Even if we had all the money we needed for such analyses, we would nonetheless very quickly reach the

limit of our capacities. It requires complex equipment, which is lacking catastrophically. The very necessary mass spectrometers. Moreover, this analysis is a lengthy procedure. Inasmuch as we do not have our own instruments, we must involve the academic institutes. But they, after all, cannot drop everything and do only our analyses. The situation with dioxin can still be justified—this problem came into the foreground only recently...

[Correspondent] Are we in a position generally to conduct systematic analysis on all of the necessary components? Let us assume there are more than 100, but we conduct only 10?

[Danilov-Danilyan] Unfortunately, we are not in a position....

[Correspondent] Is it contemplated to equip, nevertheless, all laboratories of the Ministry of Ecology in a proper way, or, considering our difficult economic situation, has this question now been dropped entirely? After all, ecology today is a very good sphere for capital investments and conversion.

[Danilov-Danilyan] The question of equipping the laboratories is being raised. But we have already said that initial capital investments are necessary. The question arises: Who will make these capital investments? You yourselves know in what condition the budget of our state is. But private investments have to pay for themselves—and, at the same time, no worse than in other branches. This does not exist yet.

There will be cost recovery in the environmental protection sphere only when enterprises are placed in extremely tough conditions. When they are obliged by law and acts under the law to bear large expenditures when they violate the rules and norms of environmental protection.

We cannot at present place them under such tough conditions, so that they would recover all investments, let us say, in ecological machine building. I have already talked about normative payments, but I have not said yet that in comparison with 1991, they are increased by five times. And in the future, it is proposed that [illegible] indexed for inflation. Of course, this is not enough [illegible] payments should be increased even more. But we [illegible] support this. Under conditions of a slump in production, enterprises will not be able to survive such a burden. We understand very well that an ecologist cannot consider his objective to be an improvement in the environment, at the expense of closing all enterprises without exception.

We are not inclined to squeeze enterprises so much that they will not be able to survive, if you are talking about our general policy. But this does not apply to the kind of pressure whose severity will fall on enterprises that pollute the environment so intolerably that the pollution can no longer warrant their existence. We will decide specifically which enterprises to subject to such tough sanctions by taking into account where the enterprise is situated and the kinds of substances it discharges into the environment.... But the main thing is that we intend to create conditions that will make it possible for enterprises independently to shift to a normal routine of production from an ecological point of view.

[Correspondent] What other levers, besides payments for polluting the environment, do you intend to use?

[Danilov-Danilyan] When it comes out, the decree on payment for natural resources—those that are not yet covered by such payments. With time, they should become one of the main items of budget income. We prepared the decree. It does not have anything especially new in it, and such payments in principle are envisioned in the law on environmental protection adopted in December of 1991.

[Correspondent] How quickly and effectively can you influence an enterprise that is polluting the environment?

[Danilov-Danilyan] The mechanism is very simple. After receiving information that some enterprise is polluting the environment, we prepare the appropriate document on wastes, we present an bill, and the tax inspector sees to the fulfillment of payments.

But this is only one side of the matter. Simultaneously, we also work with the enterprise. This work differs greatly in volume, depending on the activeness of the enterprise itself. Frankly speaking, it is easier for us, if the enterprise only pollutes, pays, and does nothing else—there is less trouble. The work begins when an enterprise submits a well-reasoned plan of development of production in accordance with ecological requirements. It coordinates this plan with us, and we decide what part of resources to leave the enterprise, and whether it should be helped from the environmental protection funds.

Naturally, they all want to be helped, but there is not enough for everyone.... But there also are absolutely special cases. You know, of course, the problem of the BVK [not further identified]. Five enterprises in Russia are now producing them. And we will consider any wastes of all of these five enterprises to be above norm. They will have to pay for them from profits, according to penalty rates. We are going to do this because we think that the existence of these enterprises is absolutely intolerable. The findings of our expert analyses are categorical, and there are only two points: 1. Stop the production of paprin; 2. Immediately develop a program to reprofile the enterprises. I must say that public support made it possible for us to take such a tough position.

[Correspondent] Thus, your capabilities have grown now. But are they sufficient to cope with the situation? In general, what are the dynamics of the ecological condition of Russia for the last several years? Are we falling into an abyss, or are we beginning, nevertheless, slowly to crawl away from the edge?

[Danilov-Danilyan] Up until 1988, the dynamics were extremely unfavorable. Pollution of the environment was growing impetuously. The rates slowed down somewhat in 1988-1989, but, starting in 1990, right up to the present time, stabilization can be seen. But, unfortunately, the reason for the stabilization, nevertheless, remains the curtailment in production. Moreover, in individual factors and in individual rayons, even stabilization did not occur. But on the average (or on the whole), air pollution is gradually falling annually by three to four percent. And the amount of wastes at operating enterprises has reduced, on the whole. The "average temperature" here, of course, cannot be calculated, but environmental protection measures let themselves be felt.

[Correspondent] But what will happen if the economy begins to revive?

[Danilov-Danilyan] I think that we will be able to maintain ourselves at today's level. Financial regulation and reliable control will make it possible for us to maintain the situation. At least, there will be no sharp jumps upward. Over the course of three or four years, we will have to "keep our balance," but afterwards an improvement in the ecological situation will begin.

[Correspondent] Are any kind of major comprehensive projects being prepared here in the country to improve the environment in a specific region, similar, for example, to the cleaning of the Great Lakes in the United States?

[Danilov-Danilyan] If you have in mind the "repair" of nature, such projects are not within our capability yet. They require colossal investments, which we will not be able to allow ourselves now or in the near future. Perhaps somewhere on a limited scale and not comprehensive.... Here we are placing more hope on the public. There are organizations, for example, Volga Revival and its affiliate, A Clean Oka, that are doing a lot in this direction. Together with us, they are working up plans for measures, they are looking for resources for their implementation, and they are monitoring execution. All of our environmental protection committees now in the Oka and Volga basin are in continuous contact with public organizations. Such organizations also function in other regions of the country. Their enthusiasm is helping us out for the time being. But we are not now really in a position to support large projects financially.

[Correspondent] Recently, a lot of international documents have been accepted that our country signed and commits itself to implement. Do we have the capability to fulfill all of these obligations?

[Danilov-Danilyan] You know, not so many norms have a correlation to all countries without exception. The most serious of such agreements is the Montreal protocol on ozone. We signed it, assumed the pertinent obligations, and developed a program for 1991—and....we wrecked it completely. Now, we are starting all over again. We are approaching it responsibly, we are selecting those measures that we will really be able to implement. It is better if we request an easing of the obligations on us than not to implement them at all. Our problems are being met with understanding in the West.

We also signed a convention on the global climate—it concerns the prevention of the greenhouse effect. It will go into force when it is ratified by one-third of the signatory states. This convention imposes certain obligations on us to reduce the discharge of carbon dioxide. But we achieved—and we consider this our diplomatic success—a special status for a state with an economy in transition. This status means that the obligations begin to go into effect in full force after the completion of this transition period.

[Correspondent] How do you generally assess the results of the UN conference in Rio de Janeiro?

[Danilov-Danilyan] In my opinion, everything there went quite successfully. It simply was unrealistic to hope for more—although that was desired very much. In a word, all of the signed documents deserved to be signed. But I by no means interpret as a catastrophe the fact that the United States did not sign the convention on biodiversity. I assume that they will comply with the requirements of this convention even better than some of those who signed it. As for the Rio Declaration, it is quite clear, and it competently and fully lays out environmental protection philosophy for the near future.

But that it exceeded my expectations, well, this is the propaganda effect of the Rio Conference.

[Correspondent] Does this effect help you? Do you sense it when it comes to deciding questions in the government and in the Supreme Soviet?

[Danilov-Danilyan] Unquestionably, it helps. Directly and indirectly, because this propaganda effect reflected on many organizations—Russian and foreign—with whom we cooperate, and firms today more and more often begin talks with the statement: All of our projects assume the strictest compliance with environmental protection norms. Some of our officials, perhaps, swear to themselves at the same time, but they remain silent. However, we in turn are pushing this process with all of our strength.

But here in Russia, this propaganda effect was very small. Almost no light was thrown on the work of the conference. And even Yeltsin's appeal to the conference participants was not published—that is all out of whack! Rutskoy's speech was not published, and abstracts of the documents also appeared only in special publications.

[Correspondent] What this says is that concern over these problems is not that great in our society.

[Danilov-Danilyan] You are absolutely right. The ecological movement and ecological consciousness began to grow here in the 1980's. In the 1970's, there was no talk about this beyond a narrow circle of specialists. It was felt that everything in our country was fine, but that decaying capitalism was poisoning itself. This stereotype

entered the social consciousness firmly. The situation changed in the 1980's. Political instability, changes, Chernobyl.... The ecological movement grew until the end of the 1980's. The peak year was 1989. There was a noticeable drop in 1990. But in 1991—almost death. Lethargy. Groups of enthusiasts are still raging somewhere, but this is a voice crying in the wilderness. Moreover, there was a rollback. And even in the program "500 days," it was written: Return to operation all of the enterprises that were stopped for ecological reasons.

Now public interest is returning to normal. And today's presence here of representatives of the business press is convincing evidence of this.

Danilov-Danilyan Addresses Regional Environmental Chiefs

93WN0113A Moscow NEZAVISIMAYA GAZETA in Russian 31 Oct 92 p 6

[Article by Andrey Bayduzhiy: "The Effect of the Law on the Environment Is Being Blocked by the Lobby for the Military-Industrial Complex, the Army, and the Ministry of Nuclear Power Engineering: This Is What Environmental Workers Think"]

[Text] "The scale of the loss from environmental violations within the republic amount to hundreds of billions of rubles each year," Russian Minister of Ecology Danilov-Danilyan reported to a conference of the chiefs of regional environmental organs that took place recently in Moscow. "Because of the irrational use of natural resources we are losing 14 percent of coal recovered, 28 percent of chromium ore, 61 percent of salts of potassium, and almost half of cooking salt. Only 30 percent of oil is being recovered from the deposits being worked, and timber losses exceed 20 percent, while according to some calculations, in agriculture we are short 30-40 percent of output. The barbarous use of soils is causing acute concern, and if the existing position is not changed, in 30 to 50 years Russia will have been deprived of all its Chernozem lands."

According to Danilov-Danilyan the efforts by the organs of environmental control at the local level are being coordinated in a very poor way one with the other. The main reasons for this are the lack of well-developed environmental legislation and the fact that the question of who owns natural resources—the federation or its subjects—has not been resolved. But even under these conditions the ministry has managed to organize a quite effective system of environmental monitoring. One of the main achievements in this field has been the creation of the State Ecological Inspection Service, which has checked about 25,000 projects, 20 percent of which were deemed unsuitable, while 40 percent were returned for further work.

Considerable attention at the conference was given to questions of radiation safety. It was not without its sensations. According to member of the Russian Federation Supreme Soviet Environmental Committee Yevgeniy Nesterov, 1 million people among the population now hold certificates as liquidators in the Chernobyl catastrophe, while in reality no more than 600,000 people were involved in this work; the other 400,000 are enjoying benefits unlawfully.

No less scandalous was the statement made by a representative of the well-known Mayak enterprise. According to his information, today under the pretense of holding international environmental conferences in Russia, Western companies are gathering very valuable scientific and technical and commercial information that it would be much more effective for the Russian side to sell, and invest the money earned in environmental measures.

As far as the law "On Environmental Protection" is concerned, it was the opinion of those attending the conference that the reasons it has still not started to work are not only the lack of subordinate legislation needed for this and the endless reorganization of environmental bodies, but also the opposition to its realization from particular departments and ministries. Enterprises of the military-industrial complex are particularly distinguished in this, and as before they remain reluctant to allow representatives of environmental control unhampered access to their territories, as does the Ministry of Nuclear Power Engineering, which, the law notwithstanding, is planning to earn hard currency by importing and storing nuclear waste from abroad on the territory of Russia. There is also strong opposition from the Navy command, which for many years has been accustomed to sinking old reactors from nuclear-powered submarines in the world's oceans.

Presidential Adviser Yablokov Views Health, Ecology 'White Papers'

93WN0075A Moscow ROSSIYSKIYE VESTI in Russian 24 Oct 92 p 2

[Remarks by A.V. Yablokov, adviser to the Russian Federation president on issues of ecology and health care, recorded by Luybov Dunayeva: "'White Papers' Reveal What Used To Be Closely Guarded Secrets: The Adviser to the President of the Russian Federation on Issues of Ecology and Environmental Protection Reflects"]

[Text] **Biologist Aleksey Vladimirovich Yablokov is adviser to the president of Russia on issues of ecology and health care, corresponding member of the Russian Academy of Sciences, and the author of dozens of scientific books which students in our domestic universities, as well as in America, Germany, and other countries, study. He was a laboratory chief at the imeni N.K. Koltsov Institute of Developmental Biology of the Russian Academy of Sciences. Therefore, a scientist of world renown came to politics. Why?**

In a conversation with a ROSSIYSKIYE VESTI correspondent the scientist admitted: I came to believe in perestroyka, incidentally, along with many others. When I was elected a Supreme Soviet deputy I decided to do just one thing, and left the laboratory. I was appointed deputy chairman of the USSR Supreme Soviet Committee for Ecology. In 1991 I became a member of the Interregional Group of Deputies.

Together with B.N. Yeltsin I became a member of the Council of the Interregional Group of Deputies. However, I soon understood that my activities in the USSR Supreme Soviet made no sense. Republics were seceding, while we held long meetings and, by "making decisions," faked some kind of activity. Perhaps I understood sooner than others that such activities were not promising, and for this reason began to pay more attention to the Supreme Soviet of Russia. In July of last year, that is one month before the putsch, Boris Nikolayevich suggested that I become adviser on issues of ecology. In this capacity I embarked on working on the "White Papers."

How did this concept appear? When Russia acquired statehood (this was just over a year ago), we began to figure out what was happening in our country. After all, until December of last year Russia belonged to the USSR, and Union departments were considerably more numerous than Russian departments. The former were the "sword of Damocles" which continuously hung over Russia. I soon received an assignment from Yeltsin: To prepare, and submit in one year, reports on the condition of ecology and health care in Russia.

For a long time there was argument over how these reports were to be structured, on the basis of what parameters—by groups of population or by region? After all, it is not easy to outline, within one year, the state of affairs in areas such as ecology and health care, and then within a quite limited scope. The effort has now been completed. These are the initial reports, which from now on will be published annually. Why did reports on the situation in 1991 appear as late as October? Because statistical data for all of last year were ready as late as May. However, as we prepare reports on the situation of ecology and health care in 1992 we will use the preliminary, projected data which becomes available each quarter and each half-year. Therefore by March of this year we hope to obtain the virtually necessary statistical data for 1992.

However, the government and the president had repeatedly addressed issues of environmental protection even before these "White Papers" were published. Incidentally, such papers on these topics are published throughout the world annually and have the same title. What these documents say was not a closely held secret as far as specialists were concerned. However, these reports are significant in that they are as objective as possible. They are a reflection of the status of the environment which emerged by 1991, food for thought and action by both federal and regional organs of state government. These studies have finally made it possible to objectively evaluate the economic situation in the country. They provide an opportunity to understand in which regions the situation is particularly unfavorable, and who needs help on a priority basis.

In December of last year the Law on Protection of the Natural Environment was passed by the Supreme Soviet; in February of this year it was signed by the president. Building on this law, the government developed a special action program: About 20 executive regulations were issued, in particular, procedures for payments for natural resources and pollution of the natural environment were set forth and ecological disaster zones were specified. Therefore, a lot was done even before these reports were published.

However, I would distinguish just one problem, that of radioactive contamination, from among the entire tangle of problems which are brought up, in particular, in the report "On the Status of the Environment."

This is why in November of last year the president issued a directive on what needs to be done to combat radioactive contamination.

At issue is not only the Chernobyl program which, in particular, calls for a review of the radiation status of territories before the end of this year, and many others things which are already being done.

The results of such research are also available. A map of radioactive contamination of the country has been compiled, to be sure, not of the entire country but of the principal cities and the most populous territories. Certainly it is incredibly difficult to compile such a map for the entire country. After all, to this day there are no maps of Chernobyl. The areas across the Volga and further to the east still have not been surveyed. We hope to solve this problem too within one year.

As a result of this survey, sad "discoveries" were made. Thus, for example, Penza turned out to be afflicted by radiation. This means that yet another half million people are additionally classified as within the Chernobyl zone. In Penza itself the level of radioactive contamination was registered in excess of 1 curie per square kilometer per second (the norm is 15 microcuries). There are locations in Penza where the level is as high as 1.5 curies. Therefore, it is not ruled out that the Chernobyl zone will turn out to be more extensive, while small spots of radiation exposure on the scale of our country amount to hundreds of square kilometers.

Therefore, as a result of our work on the report we continued to discover "blank spots." Here is another fact: Literally on the eve of his presentation in the parliament the president signed a special edict "On Natural Territories of the Russian Federation Under Special Protection." For example, the report says that we have few protected territories—preserves and national parks. The edict calls for "bringing the area of protected territories to three percent" (at present, it is just over one percent). How is this to be accomplished? At the expense

of military training grounds. They occupy a larger area than preserves and national parks.

The time has now come to derive at least some benefit from this. After all, training grounds are mainly restricted areas in which neither housing nor municipal facilities were built. They amount to a tremendous expanse which may be converted right away into preserves that will only improve the landscape.

This is the first advantage of the conversion of the military-industrial complex. I believe that, in principle, the military-industrial complex can do anything. Moreover, I am convinced that we cannot overcome economic difficulties (including ecological) without taking advantage of the potential of the military-industrial complex, primarily because the defense industry accounts for more than one-half of our entire industry.

To a degree we ended up with an imbalanced economy precisely because we invested too much care, resources, and funds into the military-industrial complex. No country in the world allowed itself such gigantic investments. In a republic such as Mari El the military-industrial complex devours 82 percent of the overall economic and industrial potential. Enterprises in St. Petersburg are "employed" in the military-industrial complex at the rate of 75 percent, those in Moscow—50 percent. Given this, how could we have an abundance of consumer goods?

Sound conversion can do a lot of good. For example, aircraft plants manufactured jet planes for which they designed good gas turbines. Meanwhile, this engine may become a small gas-fired power station, and so efficient that it will outperform similar Western ones. The use of gas turbines makes it possible to resolve the problem of our power generation virtually in its entirety, and even replace nuclear power stations, the retrofitting of which calls for $60 billion. Give them one-tenth of this, and by taking advantage of designs developed in the military-industrial complex, we will completely replace our nuclear power stations with gas turbines within four to seven years. This is both tremendously advantageous and safe.

The latest surveys of pollution in the natural environment indicate that the air has become cleaner since some enterprises of the military-industrial complex were closed. First, these enterprises were subject to virtually no ecological oversight—no sanitation commissions could enter their compounds. As far as water is concerned, the issue is much more complex: For now, the volume of raw waste water is growing. The only hope is that market arrangements must work. When both the land and the enterprise have owners who will be fined for polluting, the attitude toward the land will change fundamentally.

The issue of environmental pollution is not new. England, Germany, the United States, and Japan have encountered it. Let us recall, say, the "oxygen" booths in Tokyo and policemen with special oxygen respirators. The situation will change when enterprise owners begin to compensate our society for the damage done by pollution.

Even now certain ecological requirements are enforced with regard to enterprises converted into joint-stock companies (next year, the percentage of such enterprises will increase to 30 percent). For now we will not smother them with fines. Instead, we propose a phased program for the reduction of discharges into the natural environment. If ecological requirements are not met, the enterprise will be closed. As far as installations which are commissioned for operation are concerned, they will not be opened without quite a strict state ecological review.

In the near future we will ban cars which guzzle 10 liters of gasoline per 100 kilometers; after all, world standards do not exceed 5 liters.

This is how we will gradually improve ecology, and life as a whole. I am an optimist because I see no other way out: Either we improve the ecological situation, or we perish. This simple truth is best understood by those who live in ecologically unfavorable regions: the Volga area, the Kuzbass, Southern Urals. They come up with funds for ecology and even for the ecological militia in locations where they are "getting burned." In one year they were supposed to collect R4 billion for the ecological fund in Moscow, whereas they actually collected R140 million. We cannot give commands to enterprises; that era is gone for good. Only economic arrangements will compel them. When an individual citizen takes an enterprise to court seeking compensation for damage to his health, and the enterprise has to defend itself for a long time and persistently, funds necessary for ecologically clean technologies will be found. Incidentally, such lawsuits are not uncommon in the West, but enterprises win only in 30 percent of cases.

It has so happened that we have talked mainly about ecology and little about health care. However, these are interconnected issues: When ecology is sick, people are too. Health care will also be helped by market arrangements. Enterprises will pay for the treatment of their employees which, incidentally, is becoming increasingly expensive. The ecologically cleaner a region is, the healthier the local population.

The issue of the North is frequently discussed at present. How is it to be developed? Should we build cities of 1 million there or use the rotation method, as the Americans and Canadians do? Two approaches to this are possible. Of course, people from the south who come to work in northern areas get sick more often and have difficulty adjusting. At the same time, the residents of the northern coast have lived in the North for centuries, and they will hardly adapt to southern conditions if they are resettled there.

At the same time, the North is a trove of natural resources. Finally, it accounts for 60 percent of the entire territory of our country. Consequently, the North should be developed so that natural resources are not ruined,

and people there live well. The population of the North should increase through natural growth, but not through migration.

When necessary, the rotation method is feasible. Unfortunately, under our conditions, it is fraught with people who perceive themselves as temporary, treating nature outrageously: You do your job, and then you abandon the rusty machinery, drums, and unnecessary equipment. I believe that this approach will also change quickly once the owner begins to pay for oil spills and polluting territories.

Therefore the market, and nothing but the market, will help us to solve economic problems. Indeed, it is very difficult at present. At times you give up because, for now, the market has resulted in what is far from the best—unbridled speculation, growth of prices, and impunity. However, this is merely the first stage we should go through. There is no way back.

Decree on Urgent Measures To Ensure Drinking Water Supplies

935D0061A Moscow ROSSIYSKAYA GAZETA in Russian 28 Oct 92 p 5

[Russian Federation Government Decree No. 802, 18 October 1992: "On Urgent Measures To Ensure Drinking Water Supply in the Russian Federation"]

[Text] For purposes of improving the quality of the drinking water in the population centers of the Russian Federation and increasing the reliability and stability of operation of the water supply systems, the Russian Federation Government **hereby resolves:**

1. To adopt the proposals of the Russian Federation State Committee on Industrial Policy, the scientific-production union "Roskommunmashstroy," and the enterprises as per appendices No. 1 and 2, regarding the organization in 1993-1995 of the supplemental production of 302,000 tonnes of aluminum sulfate annually for the treatment of drinking water, and starting in 1992—the production of 117,000 submersible electric well pumps per year, with increased output of these types of products in subsequent years.

The Russian Federation Ministry of Economics, the Russian Federation State Committee on Industrial Policy, and the Russian Federation Committee on Municipal Management, together with interested organizations, must take measures to ensure the output of the above-mentioned products.

2. The Russian Federation State Committee on Economic Cooperation with Commonwealth Member States, in conjunction with the Russian Federation Ministry of Economics, the Russian Federation Committee on Municipal Management, and the "Rosagrokhim" company, must conduct negotiations with the appropriate organizations of the Estonian Republic regarding the possibility of supply, beginning in 1992, of up to 120,000 tonnes of nepheline coagulant (alumoferrosulfate) per year, which is produced by the "Estonfosforit" production association, in return for the delivery of the initial raw material from Russia.

3. The Russian Federation Committee on Geology and Application of Mineral Resources must implement in 1992 and subsequent years the exploration of underground water reserves for improving the water supply, primarily in regions with a tense water management situation and absence of reliable water sources. Also, in conjunction with the local agencies of executive power, it must implement the realization of measures for protection of underground waters from pollution and exhaustion.

4. The agencies of executive power of the republics within the make-up of the Russian Federation, the krays, oblasts, autonomous formations, and the cities of Moscow and St. Petersburg, in conjunction with the Russian Federation Ministry of Finance and the Russian Federation Ministry of Economics, in formulating their predictions for socioeconomic development of the regions for 1993 and subsequent years, must provide for priority development and reconstruction of facilities for drinking water supply through all sources of financing, as well as for the realization of measures for improving water supply to the population and for adhering to requirements of sanitary protection zones for sources of drinking water supply.

List of enterprises organizing supplemental production of aluminum sulfate in 1993-1995 for treatment of drinking water

Name of Enterprise	Volume of supplemental production of aluminum sulfate (thousand tonnes per year)
Production association "Kuybyshevfosfor," city of Togliatti, Samara Oblast	30
South Urals Cryolite Plant, city of Kuvandy, Orenburg Oblast	202
Moscow Chemical Plant imeni P. L. Voykov	70

List of enterprises organizing production of submersible electric well pumps

Name of enterprise	Volume of output of pumps (thousand units per year)
Voronezh plant "Vodmashoborudovaniye"	20
Kumertau plant "Iskra," Republic of Bashkortostan	20
Zarayskiy Machine Tool Building Plant, Moscow Oblast	15
Ryazan Pump Manufacturing Plant	5
Rakityanskiy Fittings Plant, Belgorod Oblast	5
Cheremkhovskiy Machine Building Plant, Irkutsk Oblast	7
Tula plant "Shtamp" imeni Vannikov	20
Lebedyanskiy Machine Building Plant, Lipetsk Oblast	5
Voronezh scientific-production concern "Energiya"	20

State Report on Condition of Natural Environment Summarized

PM0611112392 Moscow IZVESTIYA in Russian 5 Nov 92 Morning Edition p 3

[Kim Smirnov report: "What We Breathe"]

[Text] The ecological newspaper ZELENYY MIR has begun publishing a best-seller—the State Report on the State of Nature in Russia.

Previously this document could be read only by parliamentarians and members of the government, but now by every one of us. Henceforth, in accordance with Russia's new nature conservation law, such reports will appear annually.

On the initiative of the president's administration and the Russian Ministry of Ecology 25 ministries and departments and 19 scientific research and production organizations were involved in compiling the report for 1991. It reports:

The discharge of effluent into Lake Baykal during the year increased to 230.45 million cubic meters. Of this, 169 million cubic meters was polluted. Industry and large cities continue to draw water ruthlessly from the Volga: Water collection from it amounted to 33 percent of all Russian water collection. In all, 80 percent of the Kuban's average annual flow was taken from it.

Small rivers are dying, particularly in Kalmykia, Bashkiria, and Belgorod, Voronezh, Saratov, and Chelyabinsk Oblasts. Petroleum products and phenols are literally choking the small Okhta River in St. Petersburg—their maximum permissible concentrations have been exceeded 10 times over.

Helminths (in Russian—intestinal worms) have been discovered in 14.4 percent of water samples in Leningrad Oblast. Precisely 85.7 percent of samples of recreational water in Kalmykia, 67.2 percent in Bryansk Oblast, and 62 percent in St. Petersburg do not meet requirements in terms of biological indicators.

The leaders in terms of transportation discharges are Moscow (801,000 tonnes a year), St. Petersburg (244,000 tonnes), and Krasnodar (150,000 tonnes); for discharges of sulfur dioxide—Norilsk (2.4 million tonnes a year); for solid substances—Asbest (240,000 tonnes); for carbon oxide—Novokuznetsk (440,000 tonnes); for nitrogen oxides—Moscow (120,000 tonnes).

A residual quantity of pesticides was discovered in 20 percent of the soil samples taken on 198,000 hectares of agricultural land. The soil around Monchegorsk is polluted by nickel and cobalt (the maximum permissible concentration has been exceeded by more than 10 times); around Bratsk, Novokuznetsk, Volgograd, and Krasnoyarsk—by fluorine. The content of water-soluble fluorine exceeds the maximum permissible concentration by 10-30 times.

In Russia's Non-Chernozem Zone approximately 500 species of plants and 66 species of birds are in need of protection against predatory destruction. On the other hand, in Moscow alone rats eat and spoil up to 80,000 tonnes of food a year.

An increased content of health-threatening dioxins has been registered in the output of chemical enterprises in Ufa, Shchelkovo, Noginsk, Chapayevsk, and Dzerzhinsk, and in the ashes of garbage-incinerating enterprises in Moscow and Murmansk.

Atmospheric pollution has caused up to 30 percent of general illnesses among the population of industrial centers. Only 15 percent of Russian city dwellers live on territory with a permissible level of air pollution.

In the South Urals region 935 people have chronic radiation sickness, and the incidence of leukoses has increased 41 percent.

Following the accident at the Chernobyl Nuclear Electric Power Station, zones of pollution have formed on the territory of the Russian Federation in 14 oblasts (Bryansk, Belgorod, Voronezh, Kaluga, Kursk, Lipetsk, Leningrad, Orel, Ryazan, Tambov, Tula, Penza, Smolensk, Ulyanovsk) and in the Mordovian Republic over an area of almost 55,100 square kilometers.

So, now we know precisely (before, incidentally, we used to guess) what we breathe, what we drink, and, in the

words of Arkadiy Averchenko, "what we eat to make us so clever." One small thing is lacking: Will we all together have sufficient intelligence, funds, and state and civic will to change the situation for the better?

General Grachev Defines 'Ecological Aspects' of Army's Activity

PM1011103592 Moscow KRASNAYA ZVEZDA in Russian 7 Nov 92 p 2

[Russian Federation Ministry of Defense Press Service report: "The Army and Ecology"]

[Text] The Russian Armed Forces leadership is paying increasing attention to the ecological aspects of Army and Navy activity. A few days ago, Army General Pavel Grachev, Russian Federation minister of defense, issued a special directive defining the primary tasks in this sphere.

Special responsibility for the situation was assigned to the Administration for Ecology and Special Means of Protection, which was set up within the structure of the Russian Federation Ministry of Defense by the Russian president's 26 March 1992 edict. The minister of defense has tasked relevant officials with granting all-round assistance to military environmental protection organs in their activity, and to prevent any reduction in their strength during the re-formation of military structures. The Central Laboratory for Monitoring Water Resources and Air Quality has been subordinated to the chief of the Russian Federation Administration for Ecology and Special Means of Protection.

New State Committee Provides 'Objective' Data on Nuclear Safety

93WN0115A St. Petersburg SANKT-PETERBURGSKIYE VEDOMOSTI in Russian 22 Oct 92 p 4

[Article by I. Vasilyeva: "The Atom—Under Supervision"]

[Text] **Radiation safety is one of the topics capable of giving rise to the most varied rumors. We are afraid of "radioactive" rains, mushrooms, vegetables and fruits, atomic power plants and submarines... Fear of the unknown is the most terrifying thing, and, as a rule, we know very little about radiation. And how could we know? This topic has always been shrouded in secrecy. Henceforth, information on any incidents (if they should occur, God forbid) may be obtained from a truly informed source. At the directive of B. N. Yeltsin, the State Committee for Control of Nuclear and Radiation Safety [Gosatomnadzor] was created several months ago. The Russian Gosatomnadzor is answerable directly to the president, and is not subordinate to any departments. Therefore, its information is the most objective.**

The tasks of Gosatomnadzor consist of regulating and controlling safety in the production, handling and application of atomic energy, nuclear materials, and radioactive substances for peaceful and defense purposes.

The Russian Gosatomnadzor is comprised of seven territorial districts. St. Petersburg, along with Karelia, Murmansk, Arkhangelsk and other oblasts is part of the North European district. The new service has more than enough work to do. As the chief of the North European district administration, V. I. Martynov, stated, in St. Petersburg alone, 970 different enterprises have been taken "on account," and in Leningrad Oblast—around 450. Moreover, the Baltic and Northern Fleet, the Murmansk Steamship Line, and the Leningrad Military District have been taken under control.

We might add that in the opinion of Gosatomnadzor associates, the actions of the military today present the greatest radiation danger, since up until recently they were controlled only by their own military services. Now the control will be independent. In second place is industrial pollution arising from careless handling of radioactive sources. But certainly not at atomic power plants, whose associates are most competent. Radioactive isotopes are used today in many spheres of practical activity: In industry, medicine, etc. However, the people working with them by far do not always adhere to industrial safety regulations. And recently new concerns were added: Sources of radioactive emissions have become the objects of... theft. Thus, at the Kingisepskiy production association "Fosforit," 14 radiation sources, which contained cesium-137, were stolen. Not to mention the value of these instruments, their unskilled handling presents a serious hazard. Recently, two of the stolen sources were found: In Latvia and Estonia. Evidently, like non-ferrous metals, they were profitably sold "abroad"...

The immediate plans of the St. Petersburg inspection of Gosatomnadzor include the licensing of enterprises at which radioactive sources are used. Work will be continued only by those where all safety conditions will be adhered to. The personnel will have to pass exams or tests. And we need have no doubt of the fact that the "examiners" themselves are competent persons. Most of the Gosatomnadzor associates have served in radiation safety services for 30 or more years.

The contact telephone number for the North European district of Gosatomnadzor, whose center is in St. Petersburg, is 310-51-35. Yuriy Ivanovich Khoipunov, who is responsible for community relations, is ready to answer all questions concerning radiation and nuclear safety.

Decree on Social Protection for Residents of Nuclear Power Plant Zones

935D0067A Moscow ROSSIYSKAYA GAZETA in Russian 29 Oct 92 p 5

[Decree of the Government of the Russian Federation of 15 October 1992, No. 763 (Moscow): "On Measures for

the Social Protection of the Population Living in Areas Adjacent to Nuclear Power Facilities"]

[Text] In order to provide social protection for the population living in territories adjacent to nuclear power facilities, the Government of the Russian Federation decrees:

1. To the Russian Federation Ministry of Nuclear Power:

a) to include in the estimates for the construction of new and the expansion of existing nuclear power plants expenditures on the construction in the zones surrounding these plants, as determined in the draft, of facilities of the social sphere for the population living in these zones in an amount of up to 10 percent of the capital investments allotted for construction of facilities for production purposes, in excess of the amounts specified by existing norms in the summary of expenditures on housing and civil construction.

The lists of these facilities of the social sphere and the volumes and deadlines for their construction are coordinated in keeping with local soviets of people's deputies. These lists specify the following mandatory tasks:

the creation in nuclear power plant settlements at medical therapeutic institutions of diagnostic centers where, along with the plant's workers, citizens living in the population points located in certain zones around these stations indicated in the draft will be examined on orders from the rayon public health departments;

to Ministry of Public Health of the Russian Federation and the Ministry of Nuclear Power of the Russian Federation, the allotment of modern medical equipment for equipping the aforementioned diagnostic centers;

construction outside the zones where nuclear power plants are located of health institutions for children of school and preschool age in order to provide, with the agreement of the local soviets of people's deputies, passes for children living in population points located in the zones surrounding nuclear power plants indicated in the design;

b) to permit the inclusion in the designs for the construction of new and the expansion of existing nuclear power plants the construction—for workers of these plants and residents of population points located in the zones around these plants indicated in the design—of individual residential buildings of the farmstead type, using for these purposes up to 10 percent of the funds allotted for housing construction with transfer of up to 20 percent of these buildings to the local soviets of people's deputies.

2. In order to provide financing for the construction of facilities of the social sphere in the 30-kilometer zones surrounding existing nuclear electric power plants, whose construction was prohibited as of 1 January 1992, to recommend the creation under local soviets of people's deputies with administrative-territorial jurisdiction over these electric power plants of nonbudget special investment funds with deductions by atomic electric power plants of money into the indicated funds in amounts up to two percent of the volume of their commercial output in actual prices, with the inclusion of the sum of these deductions in the production cost of the commercial product according to the procedure determined by point 2 of Decree of the Government of the Russian Federation of 5 August 1992, No. 552, "On Approval of the Statute on the Composition of Expenditures for Production and Sales of Products (Work, Services) Included in the Production Cost of Products (Work, Services) and the Procedure for the Formation of Financial Results Taken Into Account in the Taxation of Profit."

3. To establish effective in 1993 for the population living in the 30-kilometer zones around existing nuclear electric power plants beneficial rates for the use of electric power and heat (when it comes from heating supply systems of nuclear electric power plants) of consumer needs in the amount of 50 percent of the payment determined according to the established procedure.

To the Ministry of Finance of the Russian Federation and the Ministry of the Economy of the Russian Federation, with the participation of interested organizations, to determine the sources for covering and the procedure for compensating energy supply enterprises for income lost from the introduction of the aforementioned preferential tax rates.

Upon the startup of new nuclear power plants, the sizes of the zones for the application of preferential rates for the population living around these plants are determined in the design for construction of the corresponding nuclear power plants.

4. To the federal inspectorate of the Russian Federation for supervising tax activity, the Ministry of Finance of the Russian Federation, and the Ministry of the Economy of the Russian Federation, with the participation of the Ministry of Nuclear Power of the Russian Federation and the Ministry of Justice of the Russian Federation, within two months to develop and submit to the Government of the Russian Federation draft legislative acts on mandatory insurance for the civilian liability of nuclear power plants.

5. To the Ministry of Nuclear Power of the Russian Federation and the Ministry of Protection of the Environment and Natural Resources of the Russian Federation, to provide in 1992-1994 for the creation in all population points in the 30-kilometer zones around the existing nuclear power plants and other nuclear power facilities automated information points for constantly informing the population of the radiation situation.

With the startup of nuclear power plants now under construction, the sizes of the zones for creating automated information points are determined in the plan.

To the State Committee of the Russian Federation for Civil Defense Affairs, Emergency Situations, and

Cleanup After Natural Disasters, in conjunction with the Russian Federation Ministry of Nuclear Power, to establish the corresponding categories for population points in zones where nuclear power plants are located.

Conference on Energy, Ecology Appeals to Russian Authorities

93WN0105A Moscow RABOCHAYA TRIBUNA in Russian 3 Nov 92 p 1

[Article by Vitaliy Lebedenko: "Can Power Engineering Be Reconciled With Ecology?"]

[Text] **We all know about the dispute that has arisen between power engineering and ecology. Mankind is beginning to reap the toxic harvest of this dispute today. And in its search for solutions, its main question is this: Can power engineering be reconciled with ecology?**

"It can! And all the more so this is something that must be done in the Far East!" believes Vitaliy Lebedenko, chairman of the Council of the international power engineering association ADEKSO. To confirm his words, together with other interested organizations he convened power engineers and ecologists in Khabarovsk for an international conference, "Power Engineering and the Environment."

One day an ecologist was talking with a power engineer. "Why are you polluting the environment?" queried the former. "So that you'll have something to do!" replied the power engineer.

This joke, more sad than funny, was first told at the conference. For that matter the entire conference maintained a somewhat ironic tone in relation to yesterday's irreconcilability of the "polluters" and the "Greens." The participants of the meeting—they weren't newcomers in their work, be it conserving nature or multiplying energy—agreed right away that they shouldn't be fighting. On the other hand there was something they could do—save Russia and primarily its Far East from ecological misfortune through joint effort.

"Our smoke, on the other hand, is oh, so white, and there's oh, so little of it...."

Such was the way the chairman of the Japanese delegation tactfully described, as if by way of an apology, the industrial panorama so familiar to every city dweller in our country.

"Don't you think we can do the same?!" Vitaliy Lebedenko grieved. "And even better than the Japanese! We need to give scientists and planners a possibility for implementing their developments, we need to stop the flawed practice of economizing on safe technologies."

And so, this is what the participants of the conference had to say:

To the Parliament and Government of Russia: An Appeal From Participants of the Conference 'Power Engineering and the Environment'

Mankind faces a real danger of ecological catastrophe today in a time when appeals to save the environment from the destructive consequences of thoughtless economic activity are ringing ever clearer. Under these conditions, we, the representatives of the power engineering sector, together with ecologists, and with the participation of specialists from foreign countries, demonstrating unity of views on the problems of survival troubling us all, appeal to the parliament and government of Russia to do everything possible to attain a global objective—creating an ecologically healthy society.

The necessity of this appeal is dictated by the unique features of power engineering, which sometimes does irreparable harm to the planet's ecology. The "greenhouse effect," acid rain—such is nature's reaction to the work of human hands. Nor is the situation any better in Russia and other states of the former USSR. Pollution of the atmosphere and entire territories with the discharges of thermal power plants continues, and the natural balance in the vicinities of operating hydroelectric plants is being disturbed. The memory of Chernobyl is forcing people away from what would seem to be the most progressive form of energy—atomic. As a result several operating nuclear power plants are shutting down, and construction of new ones is being stopped.

That is the way things are today. But we are in a position to change things. If we say "no" to the bureaucratic approach that has reigned in the economy for many long years, if we cast off the emotions of protest rallies that deflect us from the real ecological problems. What we need today is the wisdom of scientifically verified decisions, competency and decisiveness in actions.

What we need to do first of all is to reach the understanding that further development of power engineering must proceed inseparably from solution of ecological problems. We need to break through to new technology, to a new level of safety of power production facilities, and mainly nuclear.

Russia has the necessary scientific and technical potential for such a breakthrough, it has the rich experience of practical power engineers, and it has the productive capacities of the largest and most highly respected enterprises. The priority objective is not to miss the chance today offers, not to put things off until tomorrow, to get to work. These problems are especially urgent in the Far East, where an unfavorable power engineering and ecological situation has evolved. If we do not take immediate steps here, we will place the work of the enterprises, the living conditions of the people and the nature of the region in jeopardy.

We must invest greater assets and scientific and technical potential into the development of safe energy

sources. Besides hydroelectric power plants, such facilities include plants operating off of nuclear fuel. It is to them that we should give priority in the development of power engineering, especially in Russia's Far East, to a reasonable combination of facilities of traditional and nontraditional power engineering equipped with the progressive production processes.

Such is the unanimous opinion reached following analysis of the situation by participants of the conference—power engineers and ecologists of Russia, Belarus and Ukraine, and representatives of France's Electricite de France, the Japanese nuclear industrial forum and other foreign specialists.

We need a state program supporting power engineering. It will provide a possibility for initiating construction of plants equipped with progressive production processes, as well as nuclear power plants of a new generation with safer reactors; it will help us coordinate the activities of many sectors of the national economy, and introduce a system of privileges for regions developing nuclear power engineering.

We are certain that atomic energy has a great future. But it is impossible without coordinated, purposeful actions of legislators, business people and the entire society.

We need to adopt a package of laws as soon as possible in the area of atomic energy having the purpose of defining the legal basis and principles of public relations in the use of atomic energy, protecting the health and life of people and the environment, and encouraging the participation of citizens, public associations and interested organizations in establishing state policy regarding the use of atomic energy.

We propose establishing an annual state prize for the power engineering project that is best from the ecological point of view. This will make it possible to integrally solve ecological problems right in the planning stage, and raise the prestige of ecologists and all who put the interests of man above all else.

Decree on Benefits for Organizations Involved in Chernobyl Cleanup

935D0045A Moscow ROSSIYSKAYA GAZETA in Russian 23 Oct 92 p 4

[Decree of the Russian Federation Government No. 754, 1 October 1992, "On Additional Benefits for Contracting Organizations That Are Participating in Elimination of the Consequences of the Acc ident at the Chernobyl AES"]

[Text] The Russian Federation Government decrees:

1. To establish that workers of organizations and enterprises who were sent to Bryansk Oblast from other regions and who are working on elimination of the consequences of the accident at the Chernobyl AES [nuclear electric power station] will be paid daily an amount that exceeds twice the existing norm.

The additional costs intended for these purposes will be included in the budget estimates for construction of the facilities.

2. To establish that in 1992-1993 the standard for funds for awarding bonuses to workers for the timely introduction into operation of housing and other facilities that are associated with realization of the program for elimination of the consequences of the accident at the Chernobyl AES will be eight percent of the cost of the contract operations.

3. To authorize clients to give out to construction and installing organizations and enterprises that are performing work on elimination of the consequences of the accident at the Chernobyl AES an advance in the amount of 40 percent of the amount of the contracting work for advance payment for building materials and articles, constructional structure, machinery, and equipment.

4. To authorize the Main Administration of Bryanskchernobylstroyzakazchik, in coordination with the Russian Federation Ministry of Economics and the Russian Federation Ministry of Finance, to reimburse, beginning with 1993, construction and installing organizations that are working on elimination of the consequences of the accident at the Chernobyl AES their expenditures on acquiring construction machinery, mechanisms, and automotive transport for these operations through the allocated amounts of capital investment.

5. To declare that paragraph 8 of the RSFSR Council of Ministers Decree No. 73 of 4 February 1993 has expired.

[Signed] Ye. Gaydar

Rostov Authorities Maintain Opposition To Stalled Nuclear Plant

93WN0009C Moscow TRUD in Russian 2 Oct 92 p 8

[Article by V. Lagutov, chairman of Rostov Oblast ecology commission: "Peaceful Atom on the Sly"]

[Text] **"Two years ago, TRUD wrote about the halt on construction of the Rostov Nuclear Power Plant. What is the plant's fate now?" (G. Prikhodko, Krasnodar).**

V. Lagutov, chairman of the Rostov Oblast ecology commission, brings us up to date.

The construction of the Rostov Nuclear Power Plant was halted by decision of the oblast Soviet of People's Deputies. This was because the project lacked an environmental impact study and was at variance with adopted standards for siting such plants. In response to public requests for an expert environmental impact study, the N. Ryzhkov government allocated 1 million rubles to Atomenergoprom, which wasted the money by using it to put the final touches on the project, which it

knew to be unacceptable from an environmental standpoint. Meanwhile, the local pronuclear lobby, despite the oblast Soviet's decision to halt the station's construction, sought to have it "mothballed." To all intents and purposes, this would have meant keeping the first generating units of a "Rostov-style Chernobyl" ready for start-up at any time. Only in the spring of this year was an assessment provided (alas, one that was no longer needed) of the Rostov Nuclear Power Plant's anticipated impact on the environment. Unneeded because prior to that, the Law on Environmental Protection banned the construction of these types of nuclear power plants.

However, Atomenergoprom did not give up. In April of this year, it presented the Rostov Oblast administration with three sets of an environmental impact study. Strange enough, the study somehow "caught the eye" of deputy oblast administration chief A. Shapovalov, who sent the document to the Russian Federation Ministry of the Environment for official approval, even though the expert study had shown the documentation to be of poor quality. In August, a session of the oblast Soviet again opposed the station's construction. However, the Ministry of Ecology has agreed to make its own expert environmental assessment of the project.

And so it seems that the final say is now up to law-enforcement agencies, who are to supposed to put the nuclear power monopoly in its place.

Resumption of Nuclear Power Plant Construction Opposed

93WN0073A Moscow ROSSIYSKAYA GAZETA in Russian 23 Oct 92 p 3

[Article by Anatoliy Romanov, candidate of philosophical sciences and docent at the Obninsk Institute of Atomic Energy: "Instructions Have Been Issued To Start. With an Unprepared Base and in an Unknown Direction"]

[Text] The time that nuclear power engineering has spent standing at the Chernobyl crossroads is over. A month ago at a meeting of the government chaired by B. Yeltsin general approval was given for a concept for Russia's energy policy under the new economic conditions. Back in March Ye. Gaydar signed a directive on resuming construction of nuclear power stations and expanding the capacities of existing stations. And even earlier, by government decree approval had been given not only for the resumption of construction of a series of nuclear power stations but also to restructure the Karelia, Inta, Kirov, Volgograd, and Kaluga regional power stations already in operation. Nuclear power stations were to be built to replace them. If things go down the path outlined by the government, this year funding for them will be started in accordance with the "list of very important construction sites."

The possibility is not excluded that in time these decisions will be regarded as one of the wisest strategic acts of the present government. But another scenario is also probable, namely, that they will turn out to be a global error that will be the latest useless waste of enormous funds or, what is many times more dreadful, new threats to people's health and lives.

The polemic in the country has not subsided during all these "post-Chernobyl" years. Hundreds of scientists have warned the public about the fatal consequences of choosing the nuclear scenario in the development of power engineering. Hundreds of scientists have warned the public of the fatal consequences of abandoning it. An obvious lack of consistency has been seen in the words and deeds of the powers that be. The fate lines of nuclear power engineering have really been tied in a Gordian knot that will not be simple to untie. It is easier to cut through it.

What lies behind this? A garrote of energy asphyxiation tied around the neck? A game of heads or tails? A sober and in-depth calculation, a check on all the "pros" and "cons," objectivity in the expert assessments? We hope for this kind of calculation, this kind of objectivity. But then why has the decision been reached in almost total silence? Surely this signifies either lack of respect for the public or fear of it. Is it not clear that without public support it is impossible to realize such decisions?

Because nuclear power engineering is nevertheless still standing at a crossroad. Government decisions and any directives promulgated by the authorities can be blocked. For example, by the "Greens." We have a society sick with radiophobia. It must learn and understand a great deal. First and foremost the true worth of nuclear power engineering and the degree to which it is really necessary.

A second question stems from the first, but is by no means part of it. How dangerous (unsafe) is nuclear power engineering really? This is an extraordinarily acute and intricate problem. Discussion of it has virtually been reduced to the question "Will it blow up or won't it"? The object around which the debate rages is the reactor. Hence also the main indicator adopted for the degree of safety in nuclear power engineering—the number of so-called "events," that is, emergency incidents, per reactor per year. The calculation is simple: The actual number of emergency events across a real time interval is taken and extrapolated into any future interval of time. And it turns out that if the indicator for a reactor is 1 million, then the probability is one troublesome event in a million years.

What are these millions of years when last year alone at our nuclear power stations, in the direct vicinity of the reactors, explosions thundered, knocking down walls and roofs, and fires broke out? The problem of safety in nuclear power engineering is not just a reactor problem. M. Gusarev, chief specialist of the main scientific and technical administration for the sector, names the following among the urgent problems: dealing with long-lived radioactive waste, and replacing and eliminating

nuclear reactors and other especially dangerous objects when they reach the end of their useful life.

There is a third question. And this is: What exactly will happen if, God forbid, there is an explosion? What is really happening after Hiroshima and Kyshtym and Chernobyl? It is a question that concerns the quality and nature of the danger from radiation. It is clear that it is precisely this that determines the true danger or safety of nuclear power engineering. So is the devil really not as black as he is painted? Paradoxical though it may be, this question, which is amenable to experimental verification, has been drowned in contradictions, ambiguities, and falsifications. The situation that has taken shape since Chernobyl is particularly striking. Many people have been affected by radiation, and for this reason hundreds of thousand are receiving certain state benefits, and billions of the people's money has been spent in the struggle to deal with the radioactive contamination. But semi-official scientists and medical people and biologists publicly state that apart from several dozen people, at most a few hundred, virtually no one has suffered at all.

I. Sigematsu, the leader of the Nagasaki Radiation Center, claims that "in Hiroshima and Nagasaki everyone who became sick from the detonation of the atomic bomb died within four months. At Chernobyl 31 of the liquidators also died within three months. Later, the most diverse factors affect can affect the mortality rate..." Authoritative? Undoubtedly. Objective? Hardly. Spontaneously, and quite unexpectedly for himself and his colleagues, I. Sigematsu reports the following "very important fact": "In Hiroshima and Nagasaki the first large outbreak of cancer was observed only 10 years after the bombing... A similar picture was observed in the Marshall Islands. As you know, it was there that the Americans conducted nuclear weapons tests."

Let me emphasize this: This admission, which overturns all the soothing arguments about radiation safety, crossed by chance into a quite contrary context. And how many direct statements there have been! If laymen can toll the bell... Then not only the tactful silence of the top scientific and other hierarchies but also the calming statements from "major experts" would be understandable. But surely those who know their own business, the professionals, would cry out! So in fact how dangerous is the radiation danger?...

These are only the basic questions, and without answers to them it is difficult to understand the logic of any fundamental decision. The entire set of problems associated with nuclear power engineering is much broader. Only the experts have a real idea of them. It is only they who see the sector from within. Their opinion is extraordinarily important. From sociological polls of more than 200 leading experts and leading workers at the Novovoronezh, Leningrad, Smolensk, and Chernobyl nuclear power stations, the National Center for Atomic Energy imeni I.V. Kurchatov, the institutes at Obninsk—the Physics and Energy Institute and the Nuclear Power Engineering Institute—the Dimitrov Scientific Research Institute for Reactors, the State Inspection for Nuclear Energy [Gosatomnadzor]. The author recorded the following assessments concerning the most important factors in nuclear power engineering (on a scale of 1 to 5).

The quality of the nuclear power stations now in operation (the theoretical substantiation, design, materials, geological expert examinations, geographical location of site, professional level of personnel, and personnel discipline) was assessed at 3 on the scale. The quality of recovery, processing, and transportation of nuclear fuel was 3.5. The quality of waste disposal was 2.3. Technology for decommissioning nuclear power stations was 2. The degree of safety was rated at 2 for the RBMK [uranium-graphite channel-type reactor], 3 for the VVER-400, and 4 for the VVER-1000. Safety for the new generation of reactors being developed was 4. The possibility of developing nuclear power stations with these kinds of reactors under present conditions in Russia using our own resources was 3. The degree to which the consequences of Chernobyl have been resolved was rated at 3 for physical consequences, 2 for medical-biological consequences, and 2 for general social consequences.

The experts believe that the probability of major sabotage at nuclear power stations exists and that little attention is being paid to this problem. They suggest that in the future nuclear power engineering should become not the basis but only one of the basic components of the country's energy balance. Many are convinced that there was gross error in the tactics employed after Chernobyl. The most typical opinion is this: It was necessary immediately to move to consistent withdrawal of the old nuclear power stations from operation and just as consistently build new ones that met world safety standards. The trend toward "gigantomania" is being sharply condemned: The "mega" monster reactors should be replaced with small-scale power engineering with reliably controlled reactors of optimal rating, with power units that are safe on both the technological and social planes.

The experts are pessimistic in their assessments of the degree to which nuclear power engineering is ready to extricate itself from the crisis, and they emphasize that the decision about its further existence should be nonstandard in the highest degree and well considered, and that today the time is not yet ripe. One in ten of those polled was categorically against the construction of new nuclear power stations using our own resources. They are convinced that it must be done with the help and sometimes under the leadership of foreign experts.

It is the opinion of the experts themselves that it is difficult to suspect of radiophobia or antinuclear bias those who are convinced of the need to develop their own sector, the jumping-off site from which our nuclear power engineering is supposed to advance. Is this opinion known where they are preparing and signing the fateful decrees? We assume it is not. However, it is of

course well known that the opinion of state officials is crucial for the government. Notwithstanding, it is totally indifferent to statements from presidential adviser A. Yakovlev in which he has critically evaluated the official draft of the energy policy. He made the evaluation based on calculations done by experts. In particular, they calculated that in order to ensure the safety of nuclear power stations through reconstruction $10-13 billion will be needed, while total replacement with new gas-turbine-powered heat-and-electric power stations [TETs] would require no more than $7 billion. They are calling for an open-ended moratorium on the construction of new nuclear power stations until the problem of safe radioactive waste management has been solved. They are claiming that available technical solutions make it possible to maintain energy generation at the present level and that compared to the scenario for building new stations, with respect to the TETs alone it is possible to halve the cost of work and extend their service life several times over, with significant reduction of atmospheric pollution.

There is yet one more disheartening factor in the government nuclear action. The parliamentary hearings on the "nuclear constitution"—the law on the use of nuclear energy in our country—should start any day. Without this the normal existence and development of nuclear power engineering are impossible. It is clear to any person with common sense that activity in this sphere not regulated by law cannot be and never will be really safe and optimally humane. What would be created here would be legal anarchy.

And consider this. The experts are wracking their brains and breaking their pens and the parliamentary committees and commissions are at work, and resources and time are being wasted. But the decree on nuclear energy, which is tantamount to a program for its development, and which should be determined by law and be based on it, has already fluttered out of the nest. But surely, apart from this, and first and foremost, the "nuclear constitution" defines the general conditions under which fundamental decisions may be made and implemented in the field under its control. And it is difficult to imagine that they will be sanctioned given the obviously indeterminate nature of the situation with respect to an uninformed and unenlightened public, even less against its will.

Statistics Underscore Health Problems in High-Radiation Areas

93WN0064A Moscow ROSSIYSKAYA GAZETA in Russian 20 Oct 92 p 4

[Unattributed report: "High-Radiation Areas"]

[Text] The accident at the Chernobyl AES [nuclear electric power plant] led to the radioactive pollution of parts of Belgorod, Bryansk, Voronezh, Kaluga, Kursk, Orel, Leningrad, Lipetsk, Ryzan, Tambov, Tula, Penza, Smolensk, and Ulyanov oblasts and the Mordova Republic.

Residing in the affected territories are 1,340,600 people. Rayons and centers of settlement with a density of cesium radionuclide soil pollution exceeding 15 Ci./sq km (over a total area of 2440 sq km) exist only in Bryansk Oblast. A density of cesium radionuclide soil pollution of 5-15 Ci./sq km has been found in individual rayons and centers of settlement in Bryansk, Kaluga, Tula, and Orel oblasts (over a total area of 5450 sq km). In these oblasts, an area of estrangement (Bryansk Oblast), an area of outsettlement (Bryansk Oblast), and an area of residence with the right to outsettlement have been set out. About 440,000 people reside in these areas.

On the territories of the Russian Federation polluted by radionuclides, about 70 percent of the total number of people ill require the assistance of endocrinologists. In the next 5-10 years in these regions we can expect an increase in thyroid cancer, autoimmune diseases, hypothyroidism, and problems with the sexual and somatic development of children and adolescents.

At the beginning of 1992, the health care institutions of the Russian Federation had on their registers 1,366,742 people who had suffered from the effects of radiation in connection with the accident at the Chernobyl AES.

Over the period 1987-90, the proportion of healthy individuals in group 1 (persons involved in the clean-up operations) dropped from 78 percent (1986) to 56 percent, in group 2 (evacuees) from 57 percent to 38 percent, and in group 3 (the population) from 51 percent to 28 percent. Over the period 1990-91, the mortality rate for the entire cohort dropped by 32.8 percent.

The population of the Altay Kray suffered as a result of nuclear weapons tests in the Semipalatinsk range during the period 1949-63. There were 1,560,000 people residing in the rayons of the kray that were subjected to radiation. From 1980 to 1990, the incidence of malignant growths rose from 276 to 286 per 100,000. In certain rayons of the kray, this index is even higher (in Yeltsov Rayon, 376.0). Over the period 1975-90, the incidence of stomach ulcers increased by a factor of 3 and chronic nonspecific illnesses of the bronchial system by a factor of 3.5. The incidence of hypertonia and ischemic diseases for this period rose by a factor of 5. From 1979 to 1989, the number of congenital anomalies in Altay Kray increased by 34 percent. The index for total mortality for the years 1956-60 was 7.7 per 1000, and for 1986-90 10.5.

The southern Urals region suffered radioactive pollution as a result of three nuclear accidents in the years 1949-56, 1957, and 1967. Among those residents of the southern Urals region who suffered the effects of radiation, for the 7,300 people residing in the Techa River basin, the average doses of radiation reached 170 centisieverts (935 people were diagnosed with chronic radiation disease). Over the period beginning 1950, among

the 17,000 people registered, the incidence of leukemia has increased by 41 percent, and a rise in overall mortality has been registered (17-24 percent higher than for unexposed residents of the same administrative districts). Mortality indexes from congenital anomalies among the exposed population were twice as high as in the control group.

Omsk Makes Little Headway Against Radioactive Contamination

93WN0055B Moscow MEGAPOLIS-EKPRESS in Russian No 37, 16 Sep 92 p 15

[Article by Igor Spridonov: "Ecology: Radioactive Contamination Stalks Omsk—Examination of City Reveals 155 Contamination Sites"]

[Text] More than 1,500 people in Omsk are engaged in efforts to protect against radioactive contamination. They include the oblast, city, and seven rayon sanitation and epidemiological inspectorates, an equal number of environmental-protection committees, and an equal number of civil defense departments. "These cursed rocks are coming up out of the ground," explained specialists of the civil defense department. And, it seems, they believe or pretend to believe in such miracles. Meanwhile, in various places Omsk residents are coming upon "finds" that are making their heads spin.

In Aviagorodok, for example, at a site that used to be occupied by a military unit, workers who were driving a pile foundation discovered some sort of boxes, and residents of neighboring buildings who suspected foul play contacted the oblast sanitation and epidemiological inspectorate. The latter checked them and were aghast: The dosimeters registered radiation at 8,000 microroentgens per hour.

An aerial gamma photograph that, by order of the city Soviet, was made by the Berezovgeologiya Production and Geological Association revealed six more sources of intensive radiation. For example, an ampulla of cesium-136 lying in a dump was putting out 32 roentgens per hour. A person need only be exposed for it for 20 hours to receive a lethal dose of radiation for a human being. Contamined sites were found in residential areas, on the grounds of schools and kindergartens, and at industrial sites. Officials of the oblast environmental-protection committee are shrugging their shoulders in bewilderment.

"Viktor Semenyak, the chairman of the oblast environmental-protection committee, may have been a good party organizer at his plant and a good light industry department head in the oblast party committee, but in ecological matters his competence is close to zero," said Nikolay Spynov, chairman of the city Soviet ecological commission. Incidentally, Spynov is a top-rated physician and radiation specialist. "They spent a pile of money on the aerial gamma photograph. And even though it revealed quite a few contamination sites, its effectiveness is only about 10 to 15 percent. Specialists at the Kurchatov Institute, by contrast, conduct examinations that are up to 80 percent effective."

Spynov said that personnel at Aviagorodok used to service military helicopters and that defective instruments containing radioactive substances from the helicopters were dumped and buried. Now the entire area is filled with radium. In another neighborhood close to Krasny Pakhar, there is a correctional labor colony that makes products that involve metal fusion. The production facilities make extensive use of instruments that contain radioactive isotopes. Nearby, the internal affairs administration built a house and garage for its officers. The possibility cannot be ruled out (again, according to Spynov) that soil was brought there from the colony and that a destroyed instrument containing cesium could have gotten into that soil.

Does the chairman of the city Soviet commission know what the city did with the seven million rubles appropriated from the budget for environmental protection?

"That information is a closely guarded secret," he answered. "It has only been established that of 2.5 million rubles earmarked specifically for decontamination, only 300,000 have been used for this purpose by Ochag MP (an enterprise that concluded a contract for decontamination work). The rest of the money disappeared without a trace in various public services and utilities. But what is 300,000 rubles when Ochag asked for more than a million just to decontaminate one school?"

Note: The government has appropriated 102 million rubles for such efforts throughout Russia—for a five-year period.

Norway Criticizes Chelyabinsk Radioactive Waste Plan

LD2210060592 Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian 2100 GMT 22 Oct 92

[From the "Novosti" newscast]

[Text] Norwegian experts have criticized a plan to process radioactive waste from Finland at a special enterprise in Chelyabinsk. After visiting it, they said radioactive water is so carelessly stored there that it could even enter the Barents Sea.

Tomsk Seen as Leading Candidate for Nuclear Waste Site

U.S. Financial Assistance Considered

93WN0068A Moscow MOSKOVSKIYE NOVOSTI in Russian No 41, 11 Oct 92 p 2

[Article by Andrey Kolesnikov under the "Atom" column: "Waste Does Not Make Everyone Rejoice"]

[Text] **Yet another nuclear scandal is looming. As we have learned from unofficial sources, the Ministry of Nuclear Power of Russia is conducting negotiations with the U.S. Government concerning the allocation of $300 million for the construction of a storage facility for spent nuclear fuel in the vicinity of Tomsk.**

The Design

This will be a gigantic structure, with a length exceeding 500 meters and a height of 12 meters, which will be half-buried underground. It is designed for 100,000 storage units of the plutonium and highly enriched uranium extracted from warheads. It is expected that the storage facility will be built in two stages, within six to eight years. Some of the $300 million should be allocated for the development of the social infrastructure of Tomsk.

The Competition

The residents of Tomsk and Chelyabinsk would be interested to learn that the administrations of both oblasts had fought intensely for the right to build a highly profitable nuclear waste storage facility in their jurisdictions. Head of the Administration of Chelyabinsk Oblast Solovyev even wrote a letter to Boris Yeltsin concerning this. Meanwhile, Tomsk was preferred. In the Ministry of Nuclear Power, they attribute this choice to the availability of trained personnel in Tomsk and good hydrogeological conditions: In Tomsk, subsurface water is found 20 meters below the ground surface, and in Chelyabinsk—four meters below.

The Secret

Until recently, the existence of the draft was strictly secret. This was a condition set by the American side. By all signs, the Chelyabinsk Oblast administration did not object very strenuously, being well aware of the attitude of the city residents toward facilities of this kind, especially the Mayak Plant. Only recently did information about the new storage facility leak into the local press. The concept caused indignation in the city. Signatures are being collected against the construction of the storage facility. At the same time, the Ministry of Nuclear Power pronounced the project ecologically safe, and is ready to use for monitoring the oblast Committee for the Natural Environment, the oblast soviet, and the city administration. However, this will hardly reassure the people, who are used to being treated unceremoniously when such issues of state significance come up.

Official Denies Press Report

93WN0068B Moscow ROSSIYSKAYA GAZETA in Russian 21 Oct 92 p 3

[Article by Aleksandr Chernykh, under the "Nuclear Power" rubric: "Where Is Death To Be Buried?"]

[Text] **In its issue No. 41, dated 11 October of this year, the newspaper MOSKOVSKIYE NOVOSTI published an article entitled, "Waste Does Not Make Everyone Rejoice." It was reported in the article that the Ministry of Nuclear Power of Russia is negotiating with the U.S. Government concerning the allocation of $300 million to build a storage facility for spent nuclear fuel in the vicinity of Tomsk. Let us quote from this article: "The residents of Tomsk and Chelyabinsk would be interested to learn that the administrations of both oblasts had fought intensely for the right to build a highly profitable nuclear waste storage facility in their jurisdictions. Head of the Administration of Chelyabinsk Oblast Solovyev even wrote a letter to Boris Yeltsin concerning this. Meanwhile, Tomsk was preferred..." Until recently, the existence of the project was kept secret.**

This report elicited an ambiguous response in Tomsk. We will not venture to talk about the position of the Chelyabinsk authorities, but Tomsk did not intend, nor does it intend, to engage in a struggle, to say nothing of an intensive struggle, for the right to build a storage facility for fissile materials from dismantled nuclear warheads. In a recent presentation on Tomsk television, the head of the oblast administration, Viktor Kress, said quite definitively: "Nobody from Moscow has approached the administration officially with regard to this issue. If any proposal is made, the issue will be resolved, taking the views of the residents of the oblast into account." Therefore, the report by MOSKOVSKIYE NOVOSTI to the effect that Tomsk has already been chosen cannot be called trustworthy.

Now about the assertion that the existence of this project was kept strictly secret until recently. It is hard to find a person in Tomsk who has not known about this project for, at the very least, three to four months by now. The very first reports on the expected construction of the storage facility in the restricted-access city of Tomsk-7 stirred up public opinion. Letters began to stream to the city soviets of Tomsk and Tomsk-7, the oblast soviet, the administration, and other power structures. Representatives of ecological movements took an active position. The Small Soviet of the Tomsk City Soviet of People's Deputies passed an unfavorable resolution on its construction.

Let us now quote several of the most important provisions from Resolution No. 202 of the Small Soviet of the Oblast Soviet of People's Deputies, dated 23 September 1992. It is called "On the Prospective Construction of a Storage Facility for Fissile Materials From Dismantled Nuclear Warheads." Therefore, the Small Soviet resolved:

"1. To express our extremely unfavorable attitude toward the concept of building, in the territory of Tomsk Oblast, a storage facility for fissile materials from dismantled nuclear warheads.

"2. To ban, in the absence of consent by the oblast Soviet of People's Deputies, construction and the conducting of negotiations by the leaders of the Tomsk Oblast organs

of power and government concerning the construction of a storage facility for fissile materials from dismantled nuclear warheads.

"3. If federal organs of power and government adopt resolutions on the construction of a storage facility for fissile materials and other nuclear industry installations in the territory of Tomsk Oblast without the consent of the Oblast Soviet of People's Deputies, the latter reserves the right to take the necessary measures to defend the interests of the population of the oblast."

This resolution was forwarded to the government and Supreme Soviet of Russia.

However, if everyone is "against," then who is "in favor?" The information could not have come from nowhere. At this point, the figure of Stepan Sulakshin, representative of the president in Tomsk Oblast, emerges. Stepan Stepanovich is favorably disposed toward the idea of building the storage facility. Moreover, he vigorously advocates it. In this reference, I recall a press conference which was held in Tomsk toward the end of June of this year. It was given by representatives of an official delegation from the United States of America, headed by General Robert Watters.

We should say that prior to this, the delegation had visited several enterprises of the defense complex, including the restricted-access city of Tomsk-7, in whose territory the construction of the storage facility is expected to occur. General Watters responded in the negative to a question about whether the arrival of the delegation were associated with the construction of the storage facility, stressing that they were interested only in the progress of economic reforms and conversion, and that he knew nothing about such a project.

Of course, it is hard to believe that the disarmament specialist Robert Watters knew nothing about the project. However, let us not conjecture and second-guess the general. At the same time, Sulakshin, representative of the president, made quite a definitive statement at the same press conference. Without dwelling on the specifics and details of the project, Stepan Stepanovich stated that regions would fight among themselves to secure the right to build once they had become aware of accurate information on the advantages which the project entails.

To what kind of advantages did the representative of the president refer? The point is that, according to preliminary information, the U.S. Government has indeed agreed to allocate $300 million to this end. Initially, even $400 million was mentioned. Most importantly, it is intended to allocate one-third of this amount to meet the social needs of the residents of the oblast, apparently by way of compensation for the risk entailed by proximity to the nuclear "barrel." It may be hypothesized that the proponents of the project hoped that the rustling of dollar bills would have a magic impact on the population, which is worn out by the struggle to survive.

Most likely, this was the reason for the leak of information on the supposedly top secret installation. Who in his right mind, they say, would turn down a windfall running into the millions? This is how the molding of public opinion began.

What are our Russian proponents of the construction of the storage facility counting on? After Chernobyl, it is hard to expect universal jubilation on account of such plans, all the more so because for a long time the citizens of Tomsk have been less than enthusiastic about the city of Tomsk-7, with its existing nuclear production facilities. Despite conversion causing a substantial decrease in the volume of work, the potential for danger and the sense of self-preservation remain. In addition, reports that are far from optimistic are appearing in the local press. On one occasion, an elevated radiation background was found in a channel emptying into the river Tom. On another, poachers shot and ate the meat of a moose with elevated radioactivity.

The issue of the situation of the Tomsk city water intake has been discussed in scientific circles recently. The northern section of the intake is adjacent to the storage site for the liquid radioactive waste of the Siberian Chemical Combine. Despite the fact that they draw on different subsurface layers, an elevated level of salts in the water, even if not radioactive for now, has come about somehow. A joint project with the participation of the French company GOGEMA [General Nuclear Materials Company] continues to concern the public. It envisages the enrichment of uranium from French nuclear power stations at the Siberian Chemical Combine.

Specialists from the chemical combine refer to a unique technology used in Tomsk, as well as a downpour of dollars. If we do not agree, they say, the people from Krasnoyarsk, which has a mining and chemical combine, are prepared to seize upon the initiative. Krasnoyarsk is called a competitor in the matter of the French project, and Chelyabinsk—in the matter of the storage site for dismantled nuclear warheads.

In a word, they are trying to persuade the people and the authorities that they should hurry, lest others beat them to it. Meanwhile, the people are overly cautious and doubtful, and just not swayed by pennies from heaven in the form of "greenbacks."

Oblast Deputies Reject Construction Proposal

93WN0106C Moscow ROSSIYSKAYA GAZETA in Russian 3 Nov 92 p 3

[Article by Aleksandr Chernykh under the rubric "Feedback": "Where Death Should Be Buried"

[Text] The two ROSSIYSKAYA GAZETA articles on the proposed construction near Tomsk of a storage site for fissile material of dismantled nuclear warheads have stirred up the power structures and public of the oblast. The presidential representative in Tomsk Oblast, Stepan

Sulakshin, made the first public evaluation. He had just returned from his latest trip to the United States of America. Speaking on oblast television, Sulakshin called the material in ROSSIYSKAYA GAZETA irresponsible. Of course it is customary to substantiate such a harsh description. But that was impossible to do since there were no arguments. Of course Sulakshin might also not have mentioned the "statement of the local press." But it would have been simply unimpressive to ignore the parliamentary newspaper. Just what else besides the statement about the irresponsible report did the presidential representative say?

The information received as a result of the American voyage merits special attention. It turns out that the government of the United States has already allocated 15 million dollars for design work on the storage site. Moreover, America's mass information media speak of the construction of the storage site specifically near Tomsk as a settled question. Sulakshin even showed on the TV screen one respectable publication where this information had been published. The presidential representative also reported that an authoritative conference on the storage site is to be held in Moscow in December. And there Tomsk will figure as the construction site. So how is the article in ROSSIYSKAYA GAZETA irresponsible?

Stepan Stepanovich was offended at the newspaper for an altogether understandable reason. He was called a supporter of this project in the article "Where Death Should Be Buried." But this assertion is exactly what the presidential representative could not dispute. To do that he would have had to abandon his own position which he expressed at two press conferences in June and July. Their results were extensively covered in the oblast mass information media. So at the end of the broadcast came the standard phrases, that he would protect the interests of Tomsk residents. How? By trying to ensure that an oblast representative would be present during all negotiations regarding the question of the proposed construction. It is altogether logical to mention in this regard that before conducting negotiations the opinion of the oblast's residents needs to be learned. In short, Stepan Stepanovich flew to Moscow after being in Tomsk for a short time.

But his presence was simply essential at the 16th session of the oblast soviet of people's deputies which opened on 27 October. It was essential, first, because Sulakshin is a deputy of this soviet. And secondly, the newspaper article changed the session's proposed agenda. On the day it opened the deputies received xerox copies of the newspaper article. On that same day the article "Where Death Should Be Buried" was reprinted by the city newspaper TOMSKIY VESTNIK with a reference to ROSSIYSKAYA GAZETA. And after a stormy discussion, the question of the proposed construction of the storage site in the closed city Tomsk-7 was specially included in the agenda of the session's work.

The discussion proved to be an emotional one. In principle one could assume from the sentiment of the hall that a sharply negative decision would be reached. And there could be no talk of any fundamental consensus on construction, which Russia's minister of atomic energy Mikhaylov requested in his letter.

The floor was given to the chief engineer of the Siberian Chemical Combine, Nikolay Sergeyevich Osipov. It is specialists of the combine who are supposed to service the nuclear storage site. One can guess the chief engineer's position. Is disarmament going on? Must the nuclear components be stored somewhere? So store them in the same place where the nuclear materials are produced. There are specialists able to provide control over them there.

From the standpoint of abstract logic the position is irreproachable. But if one adds to this that the storage site will meet all safety demands and can survive a direct nuclear attack, then the position is simply unassailable at first glance. Incidentally, the construction of the storage site is estimated at 1.8 billion rubles in 1991 prices.

And now for the counterarguments made by the deputies. The storage site is supposed to be built in a zone oversaturated with dangerous industrial installations. That includes the Siberian Chemical Combine itself with its nuclear production facility. That includes the atomic heat supply plant with two active reactors. That includes the open reservoir of liquid radioactive waste left from past times. Added to all this, a civilian industrial giant is located next door, the Tomsk Petrochemical Combine. And there have already been several serious accidents there. The launching of a fourth combine even had to be stopped. This picture characterizes the potential explosiveness of all the installations listed.

The ecological side. The concentration of high-powered production facilities has resulted in a steady growth in diseases registered among the local residents. The figures were cited at the session. Incidentally, the oblast ecology committee rejected the design of the storage site proposed to it at the expert study because it mentioned only the technical part. There was no word of its impact on ecology or of what consequences there could be for nature and people taking into account the harmful production facilities already operating. There was also talk at the session of the fact that according to international standards such an installation must not be located right next to a city of half a million people.

Tomsk is already within the 30-kilometer protected zone of the heat supply plant. A doctor of geological-mineralogical sciences invited to the session, Professor Gennadiy Rogov, expressed the opinion of a group of authoritative scientists. He pointed out that building such a storage site in the oblast is not wise given the existing mining-geological conditions.

The disagreement with the idea that such a global question is being decided by the government and, in particular, the Ministry on Atomic Energy sounded

completely reasonable. Why has representative power been evaded? Why is a question of all-Russian scope not being discussed in Russia's Supreme Soviet? For it is not a simple storage building they want to build. And this question cannot be resolved by Tomsk Oblast alone. At the very least the opinion of the closest neighbors, and even of all Siberia must be taken into account.

And if it is in fact necessary to build such a storage site, then a suitable place far from populated points must be carefully chosen. Build both the storage site and an enterprise for processing the nuclear materials there. So that this complex has special status and is under federal jurisdiction. At the very least it is not a department which should decide such questions, or even the government, especially through some secret negotiations with the American government. That is the prerogative of the supreme organ of legislative power and the population of the Siberian region.

And at This Time

Last Friday the question of the construction of the storage site for nuclear waste in the rayon of Tomsk-7 was reviewed at a large session of the oblast soviet. The construction of the storage site was rejected by a majority vote (80 percent). SNA.

Researchers Study Proposed Novaya Zemlya Nuclear Waste Site

93WN0055A Moscow NEZAVISIMAYA GAZETA in Russian 13 Oct 92 p 6

[SEVERO-ZAPAD News Agency report: "Nuclear Waste Site"]

[Text] A geological survey group transported to the shores of Novaya Zemlya aboard the tanker Serebryanka has conducted research on a project for constructing a large radioactive waste site. The project calls for creating a waste site near Cape Bashmachnyy on Novaya Zemlya. The final decision on its construction is to be taken by the Russian government. However, public ecological organizations in the oblast intend to protest against the project.

Captain Komarov of the tanker Serebryanka has denied a report in the Norwegian newspaper ARBEIDER BLADET to the effect that yet another discharge of radioactive wastes into the Kara Sea was linked to that tanker's passage through it. Captain Komarov said that not one drop of radioactive wastes was poured from the tanker and that all wastes are recycled and stored near Murmansk. The tanker Serebryanka is used to transport radioactive wastes from Novaya Zemlya.

Novaya Zemlya Residents Face New Hardships

93WN0095B Moscow ROSSIYSKIYE VESTI in Russian 30 Oct 92 p 4

[Article by Vladimir Gondusov, TASS exclusive for ROSSIYSKIYE VESTI: "In the Neighborhood of a Nuclear Testing Facility—A Report from Novaya Zemlya"]

[Text] Island of Novaya Zemlya-Moscow—It is paradoxical that over our three-day stay in the settlement of Belushya Guba, administrative center of the Arctic archipelago Novaya Zemlya numbering about 5,000 residents, no one with whom we spoke brought up the topic of the nuclear testing facility. It seemed as though there were no experimental facilities for the menacing weapons on the islands.

It turns out people are not at all frightened by radioactivity and nuclear explosions—the facility has been silent for two years now, and indeed only one underground explosion was conducted over the two years prior to that. My colleagues from abroad, with their dosimeters, were personally convinced that the radiation background level in areas in which nuclear testing was conducted was even less than that of Zubovskaya Square, near the press center of the Ministry of Foreign Affairs where we began our trip to the Arctic. Though no one hid from us the fact that there are three zones in the archipelago where the background level is higher than the norm.

It is not radiation which local residents are most afraid of, but the whims of weather...and polar bears.

This is why the archipelago has an unwritten law—if you see one of the clumsy beasts near the homes, you must immediately report it. Local radio then broadcasts a warning right away: "Attention, garrison residents. A polar bear has appeared in the settlement..."

Clumsy beasts are the single "criminal element" in the Arctic archipelago. There simply are no others in Belushya Guba or in other settlements of the archipelago. There are no police here. The military—it is they who have been the sole masters of the islands for almost 30 years—maintain order in strict fashion.

We had numerous conversations with the women of the settlement. They are all mainly officers' wives, accustomed to hardship, but they made no secret of the fact that things were tight as far as food was concerned, especially fruits and vegetables. Deliveries of food to the archipelago are hampered. I observed the following prices in the store: a loaf of bread—13 rubles, butter—240, apples—70, potatoes—35. The money people earn today on Novaya Zemlya is not particularly good—senior officers make about 20,000, doctors and teachers—5,000-7,000. In the opinion of one woman, you cannot save a lot today in the North. It used to be the pay differential was quite a bit more noticeable.

...When we flew into Moscow and walked down the stairway, one journalist said: "All the same, what wonderful air they have in Novaya Zemlya. God knows what we are breathing in Moscow!" With that, we parted.

Commission on Burying Nuclear Waste at Sea To Be Set Up

OW2910064092 Moscow INTERFAX in English 2009 GMT 28 Oct 92

[Following item transmitted via KYODO]

[Text] President Yeltsin ordered for a government commission to be set up to deal with questions relating to the burial of nuclear waste at sea. The commission is to be led by the president's aide for environment and health, Aleksey Yablokov.

The new body also includes representatives of defence and foreign ministries, as well as health and nuclear energy ministries, and the departments of marine fleet, nuclear energy and sanitation monitoring. All ministries and departments are instructed to submit to the commission appropriate materials, documents and information including classified.

The measure follows a recent statement about the existence of nuclear waste dumping sites in Russia's arctic seas from the environmentalist group, Greenpeace, which made a failed attempt to send its vessel to Novaya Zemlya archipelago where it claims used nuclear reactors of the Soviet-made submarines lie buried. However, the ship, Solo, was detained in the Kara Sea by Russian coastguards and expelled from the country's territorial waters.

Yeltsin Signs Resolution on Caspian Sea

LD0211155292 Moscow ITAR-TASS in English 1448 GMT 2 Nov 92

[By ITAR-TASS]

[Text] Moscow, November 2 (TASS)—Russian President Boris Yeltsin signed a resolution "on measures to protect the population and settlement of problems connected with the rise of the water level in the Caspian Sea." According to the report by the president's press service, the resolution envisages before January 1, 1993 to determine the borders of the territory located in the zone of periodical flooding, and approve regulations on a special regime of economic activities on this territory.

Particular attention should be paid to the scientific substantiation of the forecast of the Caspian Sea's level, the development and implementation of protective measures. It is planned to attract leading scientists to carry out scientific researches, and in 1993 work out a federal goal-oriented programme for 1996-2000 for the settlement of social, economic and ecological problems connected with the rising of the water level in the Caspian Sea.

Mercury, Heavy Metal Detected in Blood of Bashkir Children

PM0511143592 Moscow KOMSOMOLSKAYA PRAVDA in Russian 3 Nov 92 p 2

[G. Agisheva report under the "Provincial Diary" rubric: "Mercury Discovered in Children's Blood"]

[Text] The republic's youth newspaper has published medical research data on new-born babies in the cities of Salavat and Sterlitamak, those giants of the Bashkir petrochemical industry. Mercury and heavy metals were discovered in the blood of all the children tested, as was a deficiency of all kinds of vitamins.

The results of another analysis back in 1988 shows that two out of every three children in Salavat have psychological development disorders. The WHO considers a figure of one in ten is enough to bring about the degeneration of the population within two or three generations.

WESTERN REGION

Brest KGB Arrest Uranium Smugglers

WS2710164892 Minsk BELINFORM in Russian 2221 GMT 24 Oct 92

[Text] The western countries' anxiety about the leak of nuclear substances from the territory of the former USSR is well grounded. After a successful operation, KGB officers from Brest arrested two Russian citizens involved in the illegal acquisition and preservation of lethal materials. Their partners, a Polish citizen and a Brest resident, were also arrested. 2.35 kilograms of uranium were found. A criminal action was instituted.

The officers discovered uranium-238, which exceeds the permissible levels of radiation by a factor of 53. It had been transported without any protection, and had been stored for a lengthy period in an apartment. The motivation behind the crime was profit, because one kilogram of this kind of uranium costs about $200,000. "Our merchants" made a deal at $50,000 per kilogram.

The investigation revealed that in August, 1992, more than two kilograms of uranium were transported to Poland through Brest. A portion of the smuggled uranium was discovered within 24 hours, with the help of Polish officers, in the apartment of a Terespol resident. Currently, the police are looking for the rest of the uranium. The Russian Security Service revealed a group of people who were involved in illegal stealing and storage of uranium. They work in one of the Udmurtia plants. According to the Brest KGB, their Russian colleagues have arrested seven people charged with illegal stealing and storage of uranium. About 100 kilograms of uranium were discovered. The investigation is under way.

Ukrainian Environment Ministry Outlines Mariupol Cleanup

93WN0065A Kiev URYADOVYY KURYER in Ukrainian 9 Oct 92 p 5

[Report by the Ukrainian Ministry of the Environment Press Center and URYADOVYY KURYER: "The Site of Our Alarm"]

[Text] **"What is being done to improve the ecological situation in our city?"—A group of people from the city of Maiupol**

The Sea of Azov—which used to be the world's most bountiful body of water for catching fish—no longer abounds in fish these days. What this sea now abounds in is phenols, ammonium nitrate, i.e., ammonia, and petroleum products. There are now ten times more of these substances than there should be.

Where does such "abundance" come from? Last year Mariupol's enterprises dumped some 1 billion cubic meters of wastes into the Sea of Azov basin. A third of these wastes were pollutants, where's all the elements from Mendeyev's Table may be found—a fact which is bitterly pointed out by the inhabitants of Mariupol. A total of 25,000 tons of toxic substances per year are poured into this sea.

It is not only from all the brooks and streams that these poisons flow into the Sea of Azov; they also fall thickly from the sky. Some 35 tonnes of harmful substances fall onto each hectare of the adjacent territory and into the aquatorium itself; that is 138 times as much as the average for Ukraine as a whole.

Are there enough figures to substantiate this? Sad to say, there are indeed: The Donbas and the Azov region are the black spots on Ukraine's ecological map. And even against such a background the situation in Mariupol looks tragic.

The medical statistics inexorably and ruthlessly affirm the following facts: The indicators of the overall disease rate among the population here—especially oncological diseases, acute cardiovascular diseases, diabetes mellitus, stomach, i.e., gastric ulcer, and intestinal diseases—is several times higher than the average level. Thare has been an increase in infant mortality, as well as what is professionally termed the "pathology of the newly born," and one out of every four desired preganancy ends in a spontaneous abortion, i.e., a miscarriage. And behind every such "pathology" there are crippled children's bodies, souls, and grief.

Nevertheless, there has been a great deal of sympathetic reaction to all this from all over Ukraine—and not only from there. Especially with regard to the children. Last year swimming was prohibited in August for the entire Sea of Azov. And this year the health-resort season has, in fact, not yet begun, while the chief state physician in charge of sanitation for Donetsk Oblast has already been compelled to put a halt to the use of health-resort institutions in the area around the Sea of Azov. He had to do this by a special order. Who knows how long we will have to wait for him to issue a report on this matter....

It is certainly mothers who feel most painfully about such scorn for nature and people. The association entitled "Democratic Women for Women's Rights" extrapolated on these troubles in a letter to L.M. Kravchuk. The president of Ukraine then assigned the environmental-protection and health-care organs the task of analyzing the situation and taking the appropriate measures.

The specialists went to the city and zealously looked into all the details of the ecological troubles; they unearthed and analyzed the data of the abundant check-ups, as well as the demands, orders, and points of the numerous programs and positions, which had essentially remained on paper. Against a background of emotional abuse and scolding meetings were held among the leading officials from the ministries, representatives of the city's public community, and environmental-protection people. Their work was summed up at a public session of the collegia of the Ukrainian Ministry of Environmental Protection and Ministry of Health Care, which took place in Mariupol. Participating in this session were deputies of the Ukrainian Supreme Soviet [Rada], specialists, scientists, and activists from civic, i.e., citizens', organizations.

It is not surprising that the collegia provided a rude and even fierce assessment of the operations carried out under the direction of the Metallurgical Combines imeni Illych and "Azovstal," the coking-chemical plant, and the "Azovmash" Concern. Then again, they certainly do account for virtually all the harmful wastes and emissions which are suffocating Mariupol. And—at the same time—the Combine imeni Illych has installed dust-removal units, i.e., "scubbers," at only 63 percent of its sources of emissions; "Azovstal" has them at 68 percent, and the coking-chemical plant—at 8 percent. Furthermore, as check-ups have indicated, one-third of these installations are working inefficiently.

The above-mentioned discussion was frank and sharp—but, at the same time, constructive. Just what did they agree upon?

The most important matters are specifically as follows: to put an end at the enterprises to preparing and mixing in materials necessary to meet the norms of the marginally allowable emissions and effluents; to introduce purification units into the design system and ensure that they work efficiently; to introduce propositions about those who activity is obsolete; those producing pollutants must be brought to a halt, restrained or confined; a schedule must be worked out for resettling those inhabitants of Mariupol who live in the hazardous sanitary-hygiene zones of the enterprises (and the resettlement process itself must be completed prior to 1995).

So that these projects might be performed and carried out in the agreed-upon manner, it was recommended

that a Council on Ecological Safety be created in this city and that a group of international experts be sent to Mariupol. And so that no frauds might be practiced, it was decided to inform Ukraine's procurator general concerning any "hoking up" or "twisting" any statistical data with regard to environmental protection.

Now with regard to the strategic preparations and endeavors to be made by the state, here are the most important of them:

—carry out an expert assessment to be entitled "Concepts of the Environmental Protection of the City of Mariupol, Taking Into Account the Future Prospects for Developing and Locating Productive Forces," and—based on this assessment—create a State Program of Preparations for Protecting the Environment of this Azov-region city.

—make it possible for the city's enterprises to sell 5 percent of their products for freely convertible, i.e., "hard," currency so that they may afford the costs of extricating this city from its ecological crisis;

—create a sepcialized organization in Mariupol for building environmental-protection facilities and an inter-sectorial laboratory for monitoring compliance with environmental-protection measures.

And so that the young citizens of this sunny, seaside city of Mariupol may remain physically healthy and ecologically well-informed, let's seek out the possibilities for erecting a building here which would be devoted to propagandizing environmental-protection knowledge and skills; it would also be a health center, a children's ecological center, and a local station for young naturalists.

It has also been recognized that—for the purposes listed above—we must intoduced into the schools, as early as the coming school year, a compulsory course on the fundamentals of environmental-protection knowledge and skills. All this is so that the young people of a renewed Mariupol—ecologically enlightened and educated, shall not permit or allow a repetition of past mistakes, but that instead the purity, cleanliness, and beauty of the Azov region may be restored.

President Issues Decree on Nuclear Plant Security

WS2710133592 Kiev KHRESHCHATYK in Ukrainian 13 Oct 92 p 1

[Decree issued by Ukrainian President Leonid Kravchuk in Kiev on 7 October: "Decree of the President of Ukraine About Urgent Measures Ensuring Security of Atomic Engineering"]

[Text] In order to ensure the reliable and safe operation of atomic engineering and a steady source of power for industry, the Cabinet of Ministers of Ukraine should:

1. Conduct negotiations with the Government of the Russian Federation on an agreement between Russia and Ukraine about fuel supplies to the nuclear stations of Ukraine and receiving the fuel used up by them with regard for the natural uranium supplies to the Russian Federation. [sentence as published]

2. Submit to the president in October, 1992, proposals concerning the management structure of the nuclear plants, enterprises, and organizations that ensure the development, operation, and security of nuclear stations.

3. Prepare a draft of the resolution of the Supreme Council about the application of the Law on Enterprises of the Ukrainian SSR to nuclear stations and enterprises supporting their work as well as the draft of the Law on the Use of Nuclear Power, and submit those to the Supreme Council in December, 1992.

4. Submit to the president of Ukraine proposals about measures encouraging the interest of regional and local self-government, local bodies of the state executive power, and the population in having nuclear engineering and industry units on their territory.

[Signed] President of Ukraine, L. Kravchuk
Kiev, 7 October 1992

Kiev City Council Adopts Nuclear-Free Zone Status

WS0411133392 Kiev KYYIVSKYY VISNIK in Ukrainian 15 Oct 92 p 1

[Article by Tamara Malkova: "And Not Only Nuclear Reactors"]

[Text] Deputies of Kiev City Council unanimously voted in favor of giving Kiev a nuclear-free zone status. Although this decision reflects a fundamental change in people's views on ecological problems, no one knows how it will be implemented.

The struggle to free big cities of the nuclear industry is under way all across the world, including Kiev's sister cities of Munich and Chicago. Odessa's American sister city, Baltimore, has already achieved this status. The aspirations of political circles such as the "greens", but also ordinary people who dream of living and raising their children in a safe world, are coming together and are increasingly helping to overcome state borders.

It is not ruled out that Kiev may become one of the international centers of the movement for nuclear-free zones.

Poor Water Reserves Necessitate Conservation Measures

AU0911201392 Kiev URYADOVYY KURYER in Ukrainian 23 Oct 92 p 6

[Information issued by Ukraine's Prime Minister's Press Service: "Threat to the Slavutych" [poetic name of the Dnieper]]

[Text] The excessive shallowing of the Dnieper has complicated the water management situation in its reservoirs. According to Ukraine's State Committee for Water Management, their total free filling capacity is already nearing a critical value, and this will not ensure the optimal filling of the reservoirs in the spring of 1993. Urgent measures for conserving water are being taken by the joint efforts of Ukraine's State Committee for Water Management and the Ministry of Nature [Minpryrody]. The supply of water from the Dnieper through its main channels has been reduced by 20 percent. The control over the utilization of water in the national economy has become more stringent. Priorities for the supply of water have been set: First, water is provided for the population and then there follow thermal power engineering and industrial enterprises with continuous operation cycles. However, it will not be possible to resolve the problem in full, unless every resident of Ukraine becomes involved in this. Strict economy means, primarily, a considerable reduction of the irreversible use of water for auxiliary needs.

Ukraine Views Options for Replacing Chernobyl Sarcophagus

93WN0105C Moscow RABOCHAYA TRIBUNA in Russian 3 Nov 92 p 2

[Article by Georgiy Dolzhenko: "How Sound Is the Sarcophagus?"]

[Text] Scientists have noted that time is passing faster than usual for the sarcophagus encasing the wounded block of the Chernobyl Nuclear Power Plant. No, not for people but for concrete, metal and other materials. The ultrahigh-strength structures, which bullets can't even scratch, the steel girders, the welded seams, bolts and nuts have noticeably aged and have begun to deform under the influence of radiation over the six years since the shelter was built. Today there are approximately 2,500 square meters of cracks over its surface. And instead of the planned 30 years' life of the sarcophagus, it is now given only 5-10 years.

Why the miscalculation? After all, the negative influence of radiation upon materials has been known to specialists since radioactivity has been known. The experience of scientists 40 years ago is well known: They lowered a sheet of plywood into a reactor, and it transformed into a friable mass reminiscent of a thin slice of bread.

Processes are going on swiftly within the structure as well. The lava-like mass consisting of chunks of nuclear material and structures, which had clinkered together into a monolith, has begun breaking down and forming dust, which was not foreseen by the scientists either. Water getting into the structure has intensified migration of fuel particles. They are now accumulating in certain places, and there was a time when the fuel mass approached a state close to critical. The situation was rectified with proper engineering decisions made by Viktor Popov, an associate of the integrated expedition of the Atomic Energy Institute imeni I. Kurchatov. He gave orders to cover the structure with a thin layer of adhesive neutron-absorbing polymer. Now this procedure is periodically repeated for preventive purposes.

The sarcophagus raises alarm for another reason as well. Rain water percolating into the ground contaminates soil water, which lies close to the surface here.

All of this has made it necessary for the society to consider the following question: What is to be done with the sarcophagus? Understandably, we have to get rid of it. But how? Numerous ideas have been offered. Some have proposed covering all of Power Block No 4 with concrete, transforming it into a huge cube, and leaving it for future generations. They'll think of something then.

There was the enticing idea of dismantling the ruins completely, together with the fourth block, burying all of the material, and planting a green meadow over the area. But once again, where are all of the special equipment and money to be obtained? And most importantly, it would take many years to carry out the project.

The most realistic idea of all is to build "Shelter-2" over the existing sarcophagus. When the initial structure collapses and clouds of radioactive dust are set free, it will keep it from spreading, and it will allow us to keep processes occurring in the ruins under observation. None of the versions has yet been adopted. The Ukrainian Cabinet of Ministers has announced an international contest to come up with a way to transform the shelter into an ecologically safe system. The prizes are: first (1)—$20,000, second (2)—$10,000 each, and five runner-up prizes of $5,000 each. **Send proposals to: 252196, Kiev, Lesi Ukrainki Square, 1, Ukrainian Chernobyl Ministry.**

Telephone: 296-31-99.

CAUCASUS/CENTRAL ASIA

Armenian President Signs Decree To Control Timber Felling

OW1111123492 Moscow INTERFAX in English 1734 GMT 10 Nov 92

[Report prepared by Andrey Pershin, Andrey Petrovskiy, and Vladimir Shishlin; edited by Boris Grishchenko; from the "Presidential Bulletin" feature—item transmitted via KYODO]

[Text] President Levon Ter-Petrosyan has signed a decree authorising appropriate departments and local governmental and law enforcement bodies to impose "the most rigid control" on the protection of the republic's forestry and tree plantations and halt illegal felling.

IF [INTERFAX] Note: The fuel shortage in Armenia resulted in few homes being adequately heated last

winter. The same situation is in prospect for the current winter. Many homes are heated by stoves which require diesel and timber fuel.

Aktyubinsk Water Supply Threatened by Toxic Chromium

93WN0103A Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 18 Sep 92 p 4

[Article by Aybas Syzdykov: "For Purification—Millions"]

[Text] **One of the primary sources supplying Aktyubinsk with water, the steppe river Ilek, has found itself threatened by total contamination with highly toxic hexavalent chromium. Measures are actively being taken in the oblast for the purpose of preventing this terrible ecological disaster.**

The primary guilty party for the pollution is the Aktyubinsk Chromium Compounds Plant. Despite financial difficulties, it has developed and is implementing a set of environmental protection measures, among which is the purification of the chromium-polluted Ilek River. Under contract from the Aktyubinsk Chromium Compounds Plant, the "Kaetyazheskavatsiya" trust is laying a pipeline with overall length of eight kilometers from the river to the plant localization station, and also erecting other auxiliary hydrotechnical facilities and buildings.

The underground lake which is 11 kilometers long and which is located under the Aktyubinsk industrial zone is already totally polluted with chromium. Therefore, the plant is building another large environmental protection facility—an ion exchange installation for purification of subterranean waters. On the whole, all this construction will cost the plant about 50 million rubles.

Residents Hope To Preserve Northern Part of Aral Sea

93WN0103B Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 23 Sep 92 p 1

[Article by Vladimir Li: "Better a Small Aral Than a Desert"]

[Text] The fruitless discussion which has dragged on for many years about saving the Aral Sea forces Aral residents to resort to their own local measures for survival. Several years ago, a project for a small Aral was proposed, i.e., the construction of a dam from Karakeren to the Kok-Aral Penninsula. The dam would separate the northern part of the sea into which the Syrdarya drains. The project was discussed, but did not receive widespread support. The adoption of this project would have meant the shattering of all hopes associated with saving the sea, since without being fed by the Syrdarya and Amurdarya Rivers it would be doomed. Yet further inaction would also be criminal. When will the discussion end? When will there be real projects?

Therefore, following the example of Karakalpakiya, which has dammed off its part, the Aral residents have built an embankment, separating off the northern section of the sea. This embankment will serve as a road, and at the same time also as a construction platform for building a dam. If it turns out as planned, and the water does not drain away to the central part of the sea through underground streams, then the minor Aral will significantly change the life of the region. It is quite probable that the water in the minor Aral will return to its old banks, to the fishing villages and to the city of Aralsk, and that the ecological situation will improve.

Yet all that is written above are merely optimistic predictions. Whether they come to pass or not, what will really happen, as yet no one knows. It is impossible to compute to the end to what consequences the perishing of the central, main portion of the sea will lead. After all, the Aral residents are proceeding by guesswork, without any ecological expert evaluations. Yet we cannot bring ourselves to condemn them—they are trying to save at least something, and quite rightfully affirm that it is better to have a small Aral Sea than a desert.

World Bank Urged To Assist Aral Sea Rescue Campaign

93WN0064B Moscow IZVESTIYA in Russian 20 Oct 92 Morning Edition p 4

[Article by Yu. Romanov, IZVESTIYA correspondent; place and date not given: "Foreign Ecologists Propose Plan To Rescue the Aral"]

[Text] **Ecology organizations in Japan, the United States, and Western Europe have asked the World Bank and foundations connected with it that finance ecological programs to provide extraordinary assistance to the dying Aral, reported the Tokyo newspaper NIKKEI WEEKLY.**

The very real prospect of a saline desert appearing where the Aral Sea now is, say the "greens," will lead to global ecological catastrophe. Thirty years ago the Aral occupied a total area of 68,000 square kilometers. Today it occupies 60 percent of that area. It contains only half its former volume of water. Winds blow away thousands of tons of salt from the dried up bottom annually, destroying agricultural crops and the natural environment and irrevocably disrupting the ecological balance.

The World Bank, several humanitarian foundations that belong to it, and ecology organizations in Japan, the United States, and Europe are trying to work out an agreement that suits the former Soviet republics situated in the Aral region.

A broad plan of long-term restoration measures has already been drafted. At their base lies an attempt to preserve water resources by means of a cardinal improvement in irrigation systems and a switch from cotton cultivation to other crops requiring lower water

expenditures. It is essential to work out an international accord on the use of river water and to introduce taxes on its use.

It has been calculated, asserts the article's author, that it will take $41.1 billion to bring the territory surrounding the Aral back to life. The former Soviet republics do not have this kind of money. If the World Bank would begin the financing, then this, apart from everything else, would become an additional stimulus for the governments of the developed countries and private foundations to take on part of the expenses for resolving this problem. True, as the article's author notes not without regret in NIKKEI WEEKLY, "at the present time the former Soviet republics are much more interested in investments that can raise the standard of living than in protecting the environment."

Aral Sea Maintains Water Level This Year

LD0111094192 Moscow Mayak Radio Network in Russian 0800 GMT 1 Nov 92

[Text] This year, for the first time in many years, there has been no drop in the water level in the Aral Sea. According to specialists, the reason for this is not just that there was a lot of rain this year, but also because water was used economically. Fishing has increased in the Aral Sea region, the famous Amu-Darya barbel has appeared, and the plant world has started to re-establish itself.

However, scientists believe there is a long way to go before arriving at a true solution to the ecological problems of the Aral Sea region. Many billions of rubles of investment and efforts of all the states of the region are still required.

This was information from the RIA agency.

Ecology Ministry Report Details Hitherto Secret Kazakhstan Nuclear Tests

PM1011125192 Moscow IZVESTIYA in Russian 29 Oct 92 Morning Edition p 2

[Oleg Stefashin report: "Nuclear Explosions in Kazakhstan Were Carried Out in 27 Places"]

[Text] On the instructions of the government, the Kazakh Ministry of Ecology and Biological Resources has collected information, formerly thoroughly concealed, on so-called one-shot nuclear weapons tests carried out outside the Semipalatinsk test site.

It turns out that 38 nuclear explosions of differing yields were carried out at 27 different places over the years. Atyrau Oblast was used most actively for these purposes; in all 17 tests of mass destruction weapons were carried out there. Eight nuclear charges were exploded at test sites in the Urals area, and the rest in Aktyubinsk, Akhmolinsk, Mangistau, and South Kazakhstan Oblasts. In the opinion of staff of the Ministry of Ecology and Biological Resources, the data they have compiled throws light on the scale of the damage inflicted on the republic by nuclear weapons tests, and will also make it possible to take more effective measures for the ecological protection of Kazakhstan's population and environment.

Aerial Survey Reveals Bishkek Radiation 'Anomalies'

93WN0009B Alma-Ata AZIYA (MEZHDUNARODNAYA GAZETA) in Russian No 16, Jul 92 p 6

[Article by Aleksey Yermolov: "Environmental Report: Radiation Under the Porch"]

[Text] Republic of Kyrgyzstan—Three days ago, a helicopter with geophysicists aboard patroled over Bishkek. The Gera (meaning "geophysics of radioactive anomalies") small enterprise was carrying out a government assignment to make a gamma-spectral survey of Kyrgyzstan's capital.

For journalists, this subject was completely off limits only recently. And it is extremely interesting: What kind of radiation could be present in placid Bishkek, far away from Chernobyl? Here is what the author saw.

In the Air

Inside, the typical eight-seat Mi-8 proved jammed with instruments, sensors, and recording machines—a veritable flying laboratory. The person in charge of the flight, geophysicist Vitaliy Lebedev, monitored the readings of the recording instruments as they registered radiation in the uranium, thorium, cesium, and other spectrums. His assistant, geodesist Viktor Trupp, was responsible for matching the readings to their sites and taking aerial pictures of the route.

After calibrating the instruments in a control area, our helicopter headed for Bishkek. Soon we were over the city's northern outskirts; the spools of ribbon were turning, and the recording instrument needles traced out meandering lines on the rolls of paper. Natural radiation background radiation isn't constant; it varies within certain limits.

It took the helicopter seven minutes to traverse the city from north to south. We could see the television tower, the railroad station, the various neighborhoods. Then we turned 100 meters to the east and began a new run, this time from south to north. And so it went, time after time, as we cruised through Bishkek's airspace at an altitude of 70 meters.

The needles of the six recording instruments tracked the background radiation curve. Natural background in the thorium and uranium spectrums vary only negligibly. A slight increase in background radiation was recorded in the vicinity of Lenin Square, as a result of the presence of a large quantity of granite slabs and supports there. However, contrary to expectations, the "White House,"

whose facing also consists of a fair amount of granite slabs, showed no deviations from the norm. On the other hand, the special security service at the presidential palace did make its presence known. On a second pass, the helicopter received a radio inquiry: Who are you, and why are you flying over us? Helicopter pilot Anatoliy Paliy gave an explanation, and we were left alone.

Natural background radiation began showing a slight increase in the southern outskirts of the city, in the vicinity of a gravel quarry. But all within the allowable limits. Suddenly the needle of the cesium spectrum sharply swung to the left and registered a sharp peak on the ribbon. An anomaly! Commander Lebedev gave an order, and our helicopter executed a turn and began hovering above the dangerous area. The operator changed the sensitivity of the sensors, and the helicopter began making short runs back and forth. Soon the radiation source was securely fixed to its site.

Under us were the buildings of a cancer center. It is clear that powerful sources of gamma radiation, such as X-ray machines and radioisotope devices, had been activated there. But the unusual thing was that all those instruments should give off radiation only when turned on. But we were recording persistent background radiation.

And so we registered the site. Tomorrow a ground group would go to the site with instruments, and the source of the high radiation would be identified. Running ahead, let me say that in this case the source was a storage facility for radioactive isotopes at the cancer center.

Every day in the air brought a radioactive find, and more than one. A few days ago, two powerful anomalies were registered in the center of the city. One peak was recorded in the vicinity of the Central Telephone Exchange, and the other strong peak occurred in the area of a private construction project on Pobeda Street.

The day before yesterday, an anomalous radiation peak was identified at the city's holy of holies—the main water collecting faciity at Orto-Alysh. Geologists who went out to the site discovered an outcrop of red uranium-containing ore.

On the Land

At the same time, another group of "Gera" specialists, armed with sensitive radiation meters, was combing the anomalies detected earlier. It found the first radiation source inside a construction site that was enclosed within a concrete wall, behind the Central Telephone Exchange. And although the power of the anomaly was such that the geophysicists' radiation meters to give off-the-scale readings, the considerable distance from residential buildings and the heavy barrier apparently shielded the city center's residents from radiation.

The geophysicists did not try to identify exactly what was causing radiation on the ground—this was not within their competence. Under existing regulations, on finding an anomaly and establishing its location, the geophysicists notify the appropriate services. We saw how they operate on Pobeda Street.

The radiation source there was found directly under the porch of a residential building. It was removed by soldiers from a special civil defense detachment that was directed and assisted by officials of the republic sanitation and epidemiological center's radiological laboratory and officers from the city's civil defense service.

The source proved to be quite a powerful one—more than 20 roentgens per hour. How did the radiation source wind up under the building's porch? With the sand. The owner said that he had trucked in sand from the Chu River. He had filled in the yard and placed concrete slabs over it. And so the soldiers had to literally sift all the sand bucket by bucket until an ampulla that was unearthed caused the instruments to give off-the-scale readings.

Because so many years had gone by, the number on the metallic capsule, which was about the size of the bone in a man's little finger, was unlikely to be of help in finding the owners who negligently lost the lethal ampulla or got rid of it in a criminal manner. The owner of the house and his wife were retirees. He had already had two heart attacks, and his wife was sick too. Both were sent to a medical commission for a detailed examination to assess the effects of their many years of irradiation. The radiation had lurked under the porch for almost 20 years.

The source in an out-of-the-way area near the Central Telephone Exchange was extracted by Lieutenant Colonel Samarbek Baygaliyev, chief of the city civil defense center, and radiologists Klara Mamushkin and Antonina Zhugan. On arriving at the site, Baygaliyev turned on his army dosimeter, and the portable radiation meter that Zhugan was carrying began clicking. They went up to the site where the geophysicists had found the anomaly and had marked it with stones. The reading on Baygaliyev's instrument immediately went off the scale, and he switched it to a higher range. Finally the clicks of the sound sensor sharply increased in frequency and merged into a single unbrocken beep.

The instruments were registering 2.8 roentgens per hour. We were standing on the edge of a foundation ditch. Somewhere here, in a pile of scrap building materials, lay the radioactive "mine."

"Well, that's enough, let's get out of here," Mamushkina ordered.

Indeed, who knows, even the film in the camera could be exposed. We moved back about 40 meters. Here the radiation was only about 10 times above the norm. Leaving the correspondent behind to observe from afar, Mamushkina, Zhugan, Baygaliyev, and several other assistants, after fastening orange "beetles"—dose accumulators—around their waists, went down to the center of the anomaly.

The fellows used shovels to pick up the soil, then carried it to almost the edge of the site and dumped it at the feet of Baygaliyev, who measured the soil's background radiation. Mamushkina and Zhugan monitored background radiation at the excavation site.

The fellows were already perspiring on their foreheads, and not because of the hard work, needless to say. The miner's hack had to be put aside—there was a danger that it might break open an ampulla; for the source was clearly an old one. And if the radioactive substance were to be released, it would be much more difficult to carry out decontamination.

But today they are lucky. After just a few minutes, Baygaliyev's dosimeter registered a sharp increase in radiation, meaning that the source was there, in the last load of soil. They had found what they were looking for. They put the source—a capsule about the size of a small-caliber bullet—into a lead container, after first writing down the number on the ampulla—925.

Another radioactive mine had been disarmed. But don't we have too many lost sources lying around? Last year an ampulla was found in Priissykkulye, on the Rybachye-Kochkorka highway. Two lost sources were found in Karabalta, and now two more in Bishkek. And surveying of the eastern, more industrialized, part of the city is still ahead.

There are numbers on all these ownerless sources of radiation. One would think that it would not be difficult to use the numbers to identify the producer plants, and after that the person who lost or simply got rid of the dangerous ampulla. But until recently those responsible slept easy. Nobody was looking for them, nobody was trying to punish them.

It seems as if the good times are over. The republic has decided to throughly clean up its territory. After Bishkek, the Chuy Valley will be surveyed, followed by the Issyk-Kul resort area.

Turkmenistan Seen in Need of National Ecological Program

93WN0052A Ashgabat TURKMENSKAYA ISKRA in Russian 18 Sep 92 p 2

[Article by S. Seytkurbanov, chairman of Turkmenistan Ekofond [Ecological Foundation], professor, under rubric "In Need of Attention": "Use of Natural Resources: Administer It Effectively"]

[Text] **A National Ecological Program Is Needed**

It would be unjust to say that the problems of stabilizing the ecological situation in Turkmenistan have been ignored by the independent state. As is generally known, we have enacted a number of special laws and governmental resolutions, and recently, on the base of Goskompriroda [State Committee for the Environment], Turkmengidromet [Turkmenistan Hydrological and Meteorological Service], and the State Committee for Forests and Pastures, we have created the Ministry for Use of Natural Resources, the Protection of Nature, and the Protection of the Environment. However, as has been demonstrated by practice, for fundamental changes in this extensive area of state activity, it is insufficient simply to enact legislative acts, to effect changes in the administrative structures, or to carry out personnel shifts.

I have in mind primarily the development of a comprehensive, scientifically substantiated Ekologiya [Ecology] program for 1993-1995 and the longer term. It must include the basic principles, strategic goals, and the first-priority tasks for improving the environment, assuring the efficient use of resources, protecting nature, increasing ecological efficiency, and preserving in their natural state valuable natural objects, the way of life that has developed historically, and the cultural heritage of the indigenous population.

The lack of a national ecological program hinders the creation of subprograms in the *velayats* and *etraps*, various branches of the national economy, and at enterprises. But, most importantly, the government actually does not have any basis for optimal planning or the financing of environmental-protection activity in the regions or on the farms. Apart from everything else, this reduces the effectiveness of the overall plan for economic and social development and of Turkmenistan's investment policy.

Reviewing the Standards

The development of the Ekologiya program is a complicated matter. It is impossible without scientifically substantiated criteria for environmental quality. However, the currently existing standards for the maximum permissible concentration (MPC) of pollution in drinking water, food products, the soil, and the air, as well as the maximum admissible emissions (MPE) of pollutants by industrial enterprises and animal-husbandry complexes, and the standards for applying chemicals to the fields are regulated by the standards base of the former USSR and, practically speaking, have not been reviewed for ten years.

They have been averaged, and they fail to take into consideration the local natural-climatic and sociocultural conditions or the differences that have developed over the course of time in the ecological condition of the various regions. In addition, for well-known reasons the departments developed standards without considering the population's rights or interests. For example, in the currently effective GOST [all-union state standard] for drinking water, the MPC standard for nitrates is established at 45 milligrams per liter. Under conditions of the hot climate, in a 24-hour period a person consumes 5-6 liters, or when working out in the open as many as 10 liters, of water. Thus, the person's organism receives, from water alone, 250-350 milligrams more than the

daily dosage that is admissible by the very same standards. The same thing occurs with the MPC standards for vegetable and melon crops, which our population consumes in considerably greater quantity than, say, in Norilsk. So it turns out that, up until now, we have standards that have mercy on production, but that are merciless to man.

The unregulated and uncontrolled application in agriculture of chemical fertilizers and especially of poisonous chemicals has led to a large contamination of the soil and, correspondingly, to the oversaturation of agricultural produce with those substances. The amount of poisonous chemicals alone that are used in Turkmenistan is an average of 9.37 kg per hectare, but in Akhalskiy *Velayat*, even more—12.7. For purposes of comparison: the average level for CIS is one to two kg per hectare...

There are currently in effect in Turkmenistan approximately 20,000 documents that regulate the quality of output, as well as the standards for admissible emissions of toxic substances. That is, there is no need to create a new standardization system, but I am convinced that there is a need to begin urgently to refine and improve the standards that are most important for improving the environment. It is necessary at such time to take into consideration both the local conditions and the experience of the World Health Organization.

An Ecological Certification System—A Command of the Times

The second important question is the ecological certification of industrial and agricultural enterprises and of transportation. Whereas in industry this work has been carried out, albeit at a low level, the agrarian section in this sense is virgin territory. And this is at a time when it is precisely our agriculture that needs intensive "therapy" for our land, air, and water. An ecological certificate for every field and every animal farm is the opportunity for making a diagnosis and for carrying out regular observation, and then, to use medical terms, effective therapy.

A key role in optimizing the use of natural resources is played by the ecological boards that stipulate the carrying out of preliminary research studies to ascertain the undesirable consequences of carrying out economic plans. Unfortunately, here too there is still a lack of scientifically substantiated regional documents that regulate the methodological basis of the State Scientific-Technical Boards of Experts, or that define the impact that the planned projects will have on the environment.

Predesign and design documentation continues to be carried out on the basis of old principles that do not take proper consideration of the present-day ecological requirements. For example, the construction of the Trans-Turkmen Unifying Water-Collection System, the assimilation of new land to be irrigated, etc. Consequently, it is necessary to develop and to approve normative acts with jurisdiction throughout the nation, that define the specific procedures for evaluating the impact that economic projects have upon the environment. The status of the independent board of ecological experts must be that of a state entity. One cannot convert board evaluation to cost accountability.

One of the effective mechanisms for implementing a national ecological policy is the use of economic methods to encourage careful use of natural resources and the protection of the environment. The administering of this process stipulates the development of a new approach to defining the procedure and the amounts of payment for the use of natural resources and for polluting the environment, the economic integrity of the environmental-protection measures, and the ecological damage. Once again, all this should be done with a consideration of the local natural and climatic conditions and the socioeconomic and other factors.

Obviously, this group of documents includes the methodological instructions for regulating the amounts of state subsidies, tax, credit, and other benefits granted to users of the natural resources in exchange for the introduction of technological schemes and production entities that have no waste products and that conserve resources, as well as the statute governing the buying and selling of licenses for the right to emit (or allow the runoff of) substances that pollute the environment.

Quality Control

The absolutely mandatory conditions for improving the administration of use of the natural resources can include the creation of an effective network for controlling the state of the natural resources (monitoring), that is equipped with modern instruments and complexes of electronic computers; mechanisms for the legal protection of the citizens who have the constitutional guarantees to live in a favorable environment; the organization of universal primary education in ecology; the expansion of interrepublic and international relations; etc.

With the transfer to the regions of considerable powers in economic activity, the basic work of protecting the environment is being carried out in the *velayats* and *etraps*. The organizing and execution of specific measures is the prerogative of the departments, enterprises, and farms. Monitoring of the implementation of the state ecological policy from the bottom up is the task of Minpriroda committees that are not dependent upon the local authorities. But the lead environmental-protection organization itself must develop, jointly with academy and branch science, the key questions and the basic principles for the environmental-protection practice in the republic, and must participate in preparing the governmental documents and legislative acts.

Turkmenistan Academy of Sciences Urges Joint Caspian Research

93WN0009A Kiev GOLOS UKRAINY in Russian 19 Sep 92 p 10

[Article by Ogulbiki Amanniyazova: "Problems: Sea Demands Attention"]

[Text] Ashgabat—The Caspian Sea's rising level is causing concern and anxiety among residents of its coasts. This concerns applies equally to residents of five countries: Russia, Turkmenistan, Kazakhstan, Azerbaijan, and Iran.

The level of the Caspian Sea has been steadily rising since 1979. Last year, the water rose by 180 to 200 centimeters in May alone, flooding a great many offices, residential buildings, economic facilities, and resort zones. At that time, the Supreme Caspian Council was formed in Baku. As its charter states, it is an intergovernmental working body of the states of the Caspian region with the aim of coordinating nature-protection and ecological efforts to restore the Caspian Sea and its environment. But it's still too early to speak of any real results from its activities.

For this reason, scientists at the Turkmenistan Acaemy of Sciences have repeatedly proposed to their colleagues in other republics that joint efforts be undertaken not only to study the causes of the sea's rising level, but also to make short-term forecasts. The Kazakhstan Academy of Sciences was the first to respond. That country is drawing up its own program of scientific and technical work to deal with the Caspian Sea's problems. Soon the two countries' scientists will meet in order to study the two sides' proposals for cooperation.

A Caspian Ecological Laboratory opened under the auspices of the Turkmenistan Academy of Sciences Desert Institute is already compiling a relief map of the sea's eastern coast and making a model of the sea's natural bottom. In addition, it is systematizing geological studies and literature sources on the history of the development of the Caspian basin and the Kara-Bogaz-Gol Gulf.

It must be pointed out that in the past, Turkmenistan didn't devote proper attention to Caspian problems. All the specialized services were located in Azerbaijan. For this reason, considerable practical and theoretical work lies ahead for Turkmenistan's researchers. The sea's onslaught can be stopped only through the joint efforts of the five Caspian states' scientists. The Caspian's problems are the same for all of these countries.

BALTIC STATES

Russian Army Refuses Inspection Access to Latvian Experts

LD2410095392 Riga Radio Riga International in English 2130 GMT 23 Oct 92

[Text] The Russian troops in Latvia are refusing to allow inspection by Latvian experts of the territory occupied by the Army to assess the damage to the environment caused by military activities, despite Russia's earlier pledge to obey Latvian laws, according to officials of Latvia's Environmental Protection Committee. Since 1945 the damage done to the Latvian environment by the Russian troops has reached more than 10 billion rubles, according to the environmental committee's estimates. (?Ins Reinvelts), chief specialist of the committee, said in an interview that experts had several times tried to carry out environmental inspection in territory under the control of Russian Army units, but were refused entry under different excuses. He said the ongoing talks between Latvia and Russia had made little progress on the issue and conceded that they had lost hope on any breakthrough. It seems, Reinvelts concluded, that Russia is unlikely to pay even a single ruble in compensation for harming the Latvian environment.

Swedish Agency To Assist Estonian Environment Efforts

93WN0008B Stockholm SVENSKA DAGBLADET in Swedish 22 Sep 92 p 15

[Article by Mert Kubu: "World Champions in Sulfur Emissions; A Dream of Weatherstripped Windows"]

[Text] How ruined is the environment in the Baltic really?

"About as bad as Europe in the 1930's. But to this must be added that the Communist dictatorship, which lasted 50 years, had a terrible attitude toward nature. During that period it grew worse and worse," said Lars Kristoferson.

Kristoferson is a man who should know because he is the vice director of the Stockholm Environmental Institute and is at this moment opening the institute's affiliate office for the Baltic in Tallinn. The office will be located in the old city and staffed by Estonian experts.

Conversation in Tallinn

We are standing in front of a dilapidated factory building in Tallinn, located on the route in from the airfield. Believe it or not, here in the middle of the city a large paper mill rumbles and spews out pollutants. No one knows exactly how much. It is a very dismal sight.

"The Estonians are the world champions when it comes to sulfur emissions per capita. Most of it is emitted as sulfur dioxide from the big power plants at Narva. A good deal of it falls on Finland, some reaches the midsection of Sweden," said Kristoferson.

Merely providing the power plants with adequate filters would be in Sweden's interest as well. Indeed, the Estonians emit more sulfur than former East Germany, 10 times more per capita than we do in Sweden.

The Russian occupation troups destroyed a great deal, as an example, by simply pouring tons of oil and gas onto the ground. In Sillamae near Narva there is an area of 100 hectares (250 acres) ruined by radioactive waste. That is being examined at the present time by a Swedish delegation of experts in order to ascertain what should be done. How much radioactivity is leaking from the

training reactors in Paldiski is not yet known. On top of that, the farmers have poured fertilizer on their land and polluted the groundwater.

But there is hope, Kristoferson adds.

"It was no better in the Ruhr area when it was at its worst. But a great deal has been done there now," said Kristoferson.

"Things will be done in the Baltic as well. But it takes time. One cannot simply close down all the plants that are polluting the environment at one time. Electric power is needed, and heat. The dreadful oil shale mines are needed. Among other things, electric power is exported to Russia and Latvia. If they were all to be closed at one time there would be massive unemployment. How should the Estonians live and also pay for measures designed to improve the environment in the future?

"Do not forget that in the midst of all of this tragedy, there is some fantastic nature to be found. Wetlands with loads of frogs, where storks are thriving."

The big problem this winter is energy. From having cost the individual virtually nothing at all, energy is now heading upward towards world market prices. Earlier there was no problem. People's radiators were white-hot. Those who found it too warm simply opened the window.

But no one this past summer had done anything to convert furnaces from oil and gas to domestic fuel. Heating conduits are old and leak like sieves. Kristoferson's dream is to establish a pilot project this winter in Tallinn to demonstrate how to use simple, cheap methods to save energy—through weatherstripping the windows, adjusting furnaces, and shutting down excess capacity. Nothing more exceptional than that.

International Team To Examine Estonia's Sillamae Nuclear Dump

93WN0008A Helsinki HUFVUDSTADSBLADET in Swedish 22 Sep 92 p 15

[Unattributed report: "Sillamae Waste Dump Investigated"]

[Text] An international team of experts will travel this Monday to Estonia in order to examine the nuclear waste dump at Sillamae, situated on the coast of the Finnish Bay. The team will ascertain what the dump actually contains and to what extent radioactive substances percolate out into the Gulf of Finland.

The dump site is situated by a Russian factory and has a volume of 5 million cubic meters. It occupies an area of 33 hectares (82.5 acres) and has an average height of 25 meters. It consists primarily of waste from uranium enrichment in the form of fine-grained sand.

According to the factory, the dump contains 10 terabecquerels of uranium and 200 terabecquerels of radium, as well as chemicals and heavy metals.

The acting director of the Radiation Security Center, Raimo Mustonen, explained that the dump site contains, according to Russian calculations, approximately 1,200 tons of waste from uranium enrichment and 800 tons of thorium waste. Oil shale ash was also dumped here and has congealed into a cement layer 5 to 6 meters thick. The factory no longer enriches uranium. Today it refines metals and produces alloys. The waste products of this process also end up on the slag heap.

Dump Site Embankments

Embankments have been built around the dump site to prevent the waste products from running into the sea. Over time, the embankments were built higher, using hardened waste products from the dump as building material. Underneath the stiff outer crust the waste is found in fluid form.

The Radiation Security Center believes that the embankments will hold, but that rain could loosen up the radioactive elements, chemicals, and even the heavy metals.

According to the Russians, a tight layer of clay which lies under the waste will prevent the radioactive elements from seeping down into the ground water. The task of the research team is to investigate whether there is radioactivity in the groundwater and, if that proves to be the case, whether it comes from the dump site.

Expensive Conversion

Raimo Mustonen feels that the dump site must be sealed off so as not to pose a threat to groundwater and the sea. The factory has suggested the waste should be contained by a concrete wall and covered with a layer of clay and moraine.

The concrete embankment should prevent the substances from percolating down into the sea and the clay and moraine layers should stop the rain water from seeping into the waste.

It is estimated that completion of the project would cost hundreds of millions of Finnish marks. Mustonen thinks the sealing off should begin immediately after the factory finds a new site for its future waste products.

Official Urges Investigation of Russian Military Nuclear Reactors

WS2810131492 Tallinn ETA NEWS RELEASE in English 2010 GMT 27 Oct 92

[Text] Tallinn, October 27—A nuclear expert group should be established to investigate the Russian military nuclear reactors in the Estonian town, Paldiski. Alar

Olljum, the first secretary to the Estonian Foreign Ministry, told the nuclear and radiation safety working group of the Council of Baltic Sea Countries in Helsinki on Monday [26 October].

Estonia has received no information from Russia about the safety of the reactors. It is known, however, that the condition of the reactors is far from satisfactory and is getting worse. Consequently, it is deemed urgent that specialists analyse the safety of the reactors and work out a schedule for dismantling the reactors and taking them with their nuclear waste out of Estonia.

Baltics, Belarus Discuss Future of Nuclear Energy

WS1211130492 Tallinn ETA NEWS RELEASE in English 1736 GMT 10 Nov 92

[Text] Tallinn, 10 November 1992—Leaders of the three Baltic countries and Belarus, a CIS state, discussed the future of nuclear energy in the region at a meeting held in Klaipeda, Lithuania, last week, Arvi Hamburg, the Estonian Deputy Minister of Energy, told ETA.

Their plans, sent to the governments of 18 European countries, Canada and Japan, discussed the development of Baltic and Belarusian energy systems over the long term.

The Baltic region has to consider the future, when Estonia's oil shale may be depleted and, consequently, it is not profitable to maintain thermal power plants, Hamburg said. An alternative variant could be the restructuring of or end building of an additional block to the Ignalina nuclear power plant in Lithuania, according to Hamburg.

REGIONAL AFFAIRS

Norwegians, Finns To Provide Aid for Kola Nuclear Plants

LD2510135192 Oslo Radio Norway International in English 1300 GMT 25 Oct 92

[Text] Norway and Finland have joined forces in an effort to improve safety of nuclear power plants on Russia's Kola Peninsula. These plants, perilously close to both countries' frontiers, are considered to be among the most dangerous in the world. The financial aid will largely go towards improving warning and firefighting systems, and a group of Russians will also receive safety training at Norway's nuclear reactor in Halden. But even after the improvements safety standards will fall far short of Western requirements.

AUSTRIA

Rauch-Kallat To Become Environment Minister

AU1211132492 Vienna ORF Teletext in German 1203 GMT 12 Nov 92

[Text] The member of the Vienna Diet, Maria Rauch-Kallat (44), will become new minister for environment, youth, and family. She will be sworn in on 25 November.

When this was officially announced today by Erhard Busek, chairman of the Austrian People's Party [OeVP], Rauch-Kallat spoke of a "life ministry." She wants to emphasize cooperation and cooperation in her new job. She has good contacts with large sections of the economy and a good relationship with Economics Minister Schuessel. She plans to make the Greens her allies, she stressed.

Rauch-Kallat will succeed Ruth Feldgrill-Zankl, who will return to Graz to lead the OeVP there in local elections at the beginning of 1993.

GERMANY

Bayer Recycles Novodur Thermoplastics

92WS0767C Paris COMPOSITES ET NOUVEAUX MATERIAUX in French 3 Aug 92 p 3

[Text] For the last several months Bayer AG and Volkswagen AG have been working together to show that Novodur, an ABS-base technical thermoplastic manufactured by Bayer and used to make radiator grilles, can be recycled. In a pilot auto reclamation plant in Leer in western Frise, Volkswagen is taking apart VW and Audi vehicles to study how certain parts might be recycled. The Novodur radiator grilles are crushed, cleaned, and then retreated to make new grilles.

Initial tests have shown that the product's qualities are entirely satisfactory for an industrial application. The recycled Novodur is made by adding new material to the crushed remains of the salvaged grilles. Its optical performance is good, it continues to hold paint well, and it retains mechanical properties that are very close in quality to those of the original Novodur.

In any event, the recycled Novodur meets requirements for automobile construction materials. What is important to Bayer is essentially to show that recycled materials can be used in major, and not just minor, applications, if adequately sorted. Rens: Bayer AGD-5090 Leverkusen, Bayerwerk; Telephone: (0124) 301; Fax: (0214) 30 89 23.

Technical Breakthrough in Converting Plastic Waste to Oil

92WS0766C Duesseldorf HANDELSBLATT in German 7-8 Aug 92 p 5

[Article by E.R.: "Chemistry: Utilization Cycle Closed; Technical Breakthrough in Recycling of Plastic"]

[Text] Duesseldorf, 6 Aug 92 (HANDELSBLATT)—The Federal Association of Chemical Industry Employers has described a major experiment, successfully concluded in Bottrop in early May 1992, as a technical breakthrough in the chemical utilization of plastic waste. For the first time, 60 tons of used plastic were brought to an existing hydrogenation plant for crude oil residues and reprocessed by hydrogenation. They were reconverted into synthetic crude oil. In its latest newsletter for executive personnel, the Federal Association of Chemical Industry Employers writes that with this technology it is therefore possible to, in principle, chemically completely utilize the plastic collected through the "dual system."

In effect since 1991, the packaging decree stipulates the recycling of waste packaging materials. With the development of the private sector waste disposal system, "German Dual System, Ltd.," industry, commerce, and the private waste disposal industry have begun to see to it that regular collection of used commercial packaging materials is guaranteed. In the household sector packaging marked with a green dot is collected and picked up separately.

The effectiveness of this system and the "green dot" itself were recently severely criticized. The newsletter for executive personnel says that, particularly as concerns plastic waste, it is falsely assumed that the recycling of plastic mixtures that come from households is in large part technically not at all possible.

It says that a turning point was reached with the big experiment in Bottrop through the hydrogenation of plastic materials. The materials employed come from the "dual system" and corresponded in composition and pollutant content to the anticipated appearance of all types of plastic used in packaging. The oils recovered were of excellent quality. The utilization cycle could be completely closed by processing them into chemical raw materials in the production of plastics—such as, for example, naphtha and diesel oil.

By as early as the summer of 1993, they expect to recycle up to 40,000 tons of plastic waste a year in this manner. There may be a further increase in the volume of recycled plastic in additional plants. A total of about 2 million tons of plastic waste a year would be obtained from industry and households in the Federal Republic. Of this, the "dual system" is expected to account for about 1 million tons of waste packaging.

In comparison with other materials, which can only be recycled a limited number of times because the quality of the materials becomes increasingly poorer, plastic can become the ideal material for recycling. The Federal Association of Chemical Industry Employers asserts that, by completely reconverting the waste to the source material, crude oil, the various types of plastic could be reproduced again and again with the highest quality. This chemical recycling would also have a positive effect on the raw material balance. While only about 4 percent of the annually extracted amount of petroleum is consumed worldwide by the chemical industry for the production of plastics—the remainder is mainly used in [auto] traffic and for heating—it is likely that a considerable reduction of this portion of oil consumption will be achieved through the rigorous chemical recycling of plastics.

Siemens' Chairman Views Future of Europe's High-Tech Companies

93WS0013A Hamburg DIE ZEIT in German 2 Oct 92 pp 37-38

[Article by Karl-Heinz Bueschemann and Gunhild Luetge: "We Can Keep Pace Quite Well"]

[Text] **Can Europe's High-Tech companies still be saved? How are they doing with risky technologies? Following is a ZEIT conversation with Heinrich von Pierer, the new chairman of Siemens' board of directors.**

[Zeit] Herr von Pierer, we have taken a close look at the European high-tech companies and have had to conclude that, as a rule, things are not going very well for them.

[von Pierer] Just a moment! You can't just look at the Europeans alone. As you well know, it has not been going very well for the Japanese for some time now either. There are many reasons for this. Some are to be found in structural problems that plague the entire industry. And, to be sure, some are also certainly "made in Japan."

Some people like to think that we have simply been outdone by the Japanese. But if you look at electronics, for example, there are many fields where we are not only just keeping pace, but are actually doing significantly better than the Japanese. The problem with us Europeans is that we do not always convert the excellent technology that we possess into market-ready products as quickly as we should.

[Zeit] Pessimists fear that Europe could easily become a technological colony of Japan.

[von Pierer] I consider that sort of generality nonsense. As I said, there are many fields in which we not only keep abreast of the Japanese, but are superior to them. That is specially the case in the systems business. It is also true for our companies, for example, in telecommunications and power engineering. The same pertains to the power-engineering equipment business and traffic systems. We also hold our own very well in plant automation and medical technologies.

[Zeit] But in all these fields, profits, relatively speaking, are receding, even in Siemens.

[von Pierer] It is true that our profits, all in all, are momentarily unsatisfactory. But if you were to put the same question to Japanese electronics companies, only a few of them could say they were satisfied with their sales at the present time. There have been some very dramatic setbacks over there

[Zeit] Has not the electronics industry fallen into a kind of technological trap worldwide? Exploding R&D expenses, on the one hand, and the sales or acceptance difficulties, on the other?

[von Pierer] A technology trap? I think you probably mean a cash trap. It is really a question of whether we will ever be able to recapture the considerable expenditures involved in the preparatory work in, for example, development projects and investments in microelectronics. And as far as the sales difficulties you refer to, it is certainly true that a substantial weakening has manifested itself in entertainment electronics, for example. Whether that signifies the impending end of the world, or simply a cyclical business drop, remains to be seen. A temporary saturation of the market may play a role.

[Zeit] Siemens has registered considerable losses in two important high-tech businesses, namely, computers and microelectronics. What has to be done there?

[von Pierer] In my opinion, we have the right idea in semiconductors. We are completely restructuring and will reduce costs tremendously. Moreover, we are attempting to avoid the cash-trap by seeking out international partnerships. In development, we have concluded the much praised alliance with IBM and Toshiba. In addition, in future we shall concentrate even more intensively on our own goal, namely, customer-specific circuit projects.

The problem is quite different in our computer daughter company, Siemens-Nixdorf. Structural problems, which afflict the entire industry, have to be addressed there. We are vexed by the problems that we ourselves assumed when we merged with Nixdorf. I am confident that we will soon have mastered those problems involved in the merging of the companies. The structural problems, on the other hand, will take us a little longer.

[Zeit] Could Siemens itself also possibly have a structural problem?

[von Pierer] Every living organism must constantly make structural changes to meet changing requirements.

[Zeit] You believe, then, that often you move too slowly and take too long in the transition from development to finished products? Is this not a typical European problem and specifically management's responsibility?

[von Pierer] That, of course, is an oversimplification.

[Zeit] We could discuss that specifically with respect to Siemens.

[von Pierer] It is still a simplification when addressed to Siemens. But I will concede one thing. Good technological concepts are not being converted into profitable products fast enough. Even though conversion represents just one link in the chain. We have to investigate the entire value-creation chain. We already have such programs in all other fields. We had already initiated a form of lean production before the concept was generally known.

[Zeit] Specifically, how does the situation in Siemens look now? The work force has not been reduced as yet.

[von Pierer] That's correct. And it is not really our desire to reduce the work force, but, unfortunately, that measure is often involved when taking the necessary steps to ensure competitiveness.

[Zeit] But you can't get the products to market faster that way.

[von Pierer] True, but an acceleration of the value-creation chain in the case of a stagnating or slow growing market also means a reduction in input factors. That includes capital as well as personnel.

[Zeit] In order to get on the market faster than the competition means constant acceleration. The innovation rate increases tremendously. At the same time, criticism aimed at risk-laden technologies increases, because many would tend to view them as unworkable. Modern mobile radios, from which Siemens had expected a good deal of future business, have already fallen into disrepute. It is generally suspected that the microwaves, on which the system is based, are injurious to health.

[von Pierer] Of course, these suspicions must be taken seriously. One certainly shouldn't rush something on to the market and simply hope that it sells.

[Zeit] But there are already mobile telephones for sale—Siemens products—that cannot even be tested to determine if they meet the established limiting values because the measurement equipment to do that is not available. How do you reconcile that with your sense of responsibility?

[von Pierer] The values of the electromagnetic waves of mobile telephones can certainly be measured. However, what has not been investigated fully is the question of how humans will react to electromagnetic waves in different situations. For that reason, the Commission for Radiation Protection, as a precautionary measure, issued recommendations in February 1992 for this transitional period. The recommendations, among other things, describe the safe distance that must be maintained between the user and the telephone antenna. But even before those recommendations we had already undertaken such measures in the design of the external form of our instruments.

[Zeit] The acceptance and safety problems involved in nuclear power are even more graphic. The plutonium emanating from the nuclear power plants, which Siemens also builds, represents an undisputed danger for all of mankind.

[von Pierer] It is not surprising that the question of plutonium would be raised. The approved disposal philosophy, which, incidently, has been agreed upon by all Federal Governments of the various political parties, is built on the principle of the closed loop. This means that the separated plutonium is recycled in reprocessing plants, i.e., into new fuel rods, the so-called Mox elements, which are reutilized and reconstituted. The process has been tested many times. We are not discussing matters that have not already been thoroughly developed and tested.

[Zeit] What you are saying is that there is still no real disposal strategy.

[von Pierer] Of course there is; it is based on the philosophy of the closed cycle. Using this process, thirty tons of plutonium will have been reprocessed to Mox elements in Germany by the end of this decade. If someone belatedly wants to change the system, then he ought to propose another solution for the plutonium.

[Zeit] You are no doubt referring to Joschka Fischer, the "Green" minster for the environment, who shut down Siemens plutonium-reprocessing plant in Hanau.

[von Pierer] Yes, him too.

[Zeit] The minister justified the shut-down on the grounds of technical shortcomings in the production process.

[von Pierer] One need only take a look at the Hessian coalition agreement to see that Hanau was per se an undesirable operation. It is my opinion that Herr Fischer's actions are strictly politically motivated and not in accordance with existing laws. We have lodged a number of complaints and will have to wait to see what the courts decide. We have mastered the Mox fuel element technology very well. It is not something uniquely German. There is a Mox plant in operation in Belgium, there is one under construction in France, and the British are considering increasing their reprocessing capacity in like manner. Japan and Switzerland are following the same disposal path. It is simply not true that this technology is generally considered to be unacceptable.

[Zeit] But the plutonium still has to be cast over and over again into new fuel elements because it is too toxic when

concentrated. A technology was implemented that produces waste, which, after forty years no one as yet knows how to dispose of.

[von Pierer] No, that is not true.

[Zeit] But the question of the final disposal of radioactive waste has to this day still not be regulated.

[von Pierer] There is a clear, politically accepted understanding of just how the closed cycle, including ultimate storage, should function. Nothing has changed about this political concept to this day. But we are being confronted by a politically motivated blockade that has to be resolved. The safe way of disposing of the plutonium is by means of Mox fuel elements. Existing plutonium must continue along this path until a way has been found to replace the closed fuel cycle with direct permanent disposal.

[Zeit] Do you consider that path to be safe?

[von Pierer] I consider that approach to be feasible, but it has not yet been realized. When you say "safe," it sounds like I am playing down the danger, which I never intended.

[Zeit] In view of the disposal problems and the lack of experience in the technologies involved in many parts of the world, do you consider it defensible to provide countries like China and Russia with nuclear-power plants?

[von Pierer] You have to decide on a rational division of work. Nuclear-power plants should only be built where the requisite basic technological standards exists. I agree that not all countries today are suitable for the construction of nuclear-power plants. But Russia and China already have their own autonomous nuclear programs that are completely independent of the outside world.

Let me say something special concerning East Europe. Here at home we speak a lot about getting rid of our nuclear-power plants, which actually have a high safety standard indeed. But we don't really address the pressing problem. Six years after Chernobyl, we are still not able to effect the urgently needed improvements on that side.

[Zeit] Why not?

[von Pierer] First of all, because the problem is not viewed in other countries the same way it is here. Secondly, despite all the initiatives of the Federal Government, the money that would be needed to do the job has not been forthcoming. Thirdly, the bureaucratic structures in those countries create problems in the sense that they often fail to make the necessary decisions or fail to implement them.

We are constantly being told that the only thing we are interested in is doing business. I can only say to that: "Of course we want to do business. That is the reason we established the company." But many of the things that have to be done extend far beyond our company's interests or ability to effect. There are many more urgent problems than standing around here and arguing with Herr Fischer as to whether the safe operation of the Hanau plant should be permitted or not. Many individuals corrupt our power policy into provincial politics.

[Zeit] There is considerable talk today about a coordinated industrial policy in Europe. What do you think of that?

[von Pierer] The words "industrial policy" suggest a glittering concept. Many are prone to dream of State subsidies. I have very little regard for any kind of Government intervention, and that even includes a sort of European-style Miti, following the Japanese model. What I do ask of a policy is equal opportunity.

[Zeit] What do you mean by that?

[von Pierer] I mean that we have to keep tabs on where in other countries subsidies are given. Take, for example, the R&D involved in telecommunications. In that field various State institutions and businesses have helped our competitors considerably. In Germany that is not done. It creates problems in terms of competition. All in all, I believe that an industrial policy should establish a framework within which companies can operate rationally. Tax laws, for example, should be included within the framework. In Germany that means that business taxes should be reduced. Nor should the training of our students and specialists be permitted to fall behind. Generally speaking, we must constantly nourish our country's performance capabilities.

[Zeit] Do you believe that there is a sufficient amount of economic and political savvy in Bonn?

[von Pierer] I really do believe there is. I have also taken note of the criticism that has been levied against the Federal Government. I consider much of it to be exaggerated and, it is my frank opinion, that too few critics understand that political business in Germany has also become a very difficult business. Many proposals for improvements would probably be more effective it they were linked to some much harsh criticism.

The Largest Private Employer

Heinrich von Pierer at an age of 51 has been running Siemens AG since Thursday. The company is Europe's largest electronics enterprise. Only the automobile producers Daimler-Benz and Volkswagen have a greater business turnover than Siemens. In the year just ended, it amounted to almost 80 billion German marks [DM]. Measured against the number of people employed, Siemens out does them all. This electronics giant, with its more than 400,000 employees, is the single largest employer in the German Federal Republic. The products offered by this Munich company range from microchips to nuclear-power plants and from refrigerators to telephones. In his more than ten years in office, Von Pierer's predecessor Karlheinz Kaske (64) concentrated chiefly on building up business in the United States. Today Siemens already produces in plants in the United States some 80 percent of the products it sells there. Von Pierer

an economist and legal specialist, hopes to build-up the presence of the company in the expanding markets of Asia.

Government, New Laender Agree on Financing of Old Ecological Burdens

AU2510172492 Hamburg DIE WELT in German 24 Oct 92 p 13

["HH" report: "Financing of Old Burdens Decided"]

[Text] Bonn—After tough and protracted negotiations, the FRG Government and the new laender, including Berlin, have agreed on a regulation for financing old ecological burdens. Friedrich Bohl, chief of the chancellor's office, announced that "the costs for the republic sector are to be divided at a ratio of 60 (Trust Agency) to 40 (laender), with a general exemption in line with the skeleton environmental law [Freistellung nach Umweltrahmengesetz]."

The regulation is to be applicable retrospectively as of 1 January 1992 to contracts of Trust Agency companies as well, which have already been privatized. Over the next 10 years, a maximum of DM1 billion per year is to be allocated for this purpose. The laender, in addition, promised to establish preconditions for quicker processing of the applications for exemption.

For large projects, such as projects of brown coal production or of large chemical industry, a different ratio of 75 (Trust Agency) to 25 (laender) for the real costs is to be applied. The selection will be decided in each individual case and a financial framework will be set up for each project.

According to Bohl, for brown coal production this means that as of 1993, approximately DM1.5 billion per year will be available for old burdens—money which will come from, among other things, privatization profits and the approved funds for job creation measures. The rest will be covered by the laender and the Trust Agency at the above-mentioned ratio.

Germany Becoming Focus of Illegal Nuclear Trade

AU2010092092 Hamburg DER SPIEGEL in German 19 Oct 92 pp 153-155

[Unattributed report: "Seeking Their Fortune in the West"]

[Text] Germany is threatening to become a center of illegal trade with uranium, poison gas, and bacteria.

Molecular biologist Karsten Henco received an unusual offer in the spring: An agent from the biochemical scene offered bacterial strains "from Russian laboratories."

Henco, manager of a biotechnology company in the Rhineland, knew about this material from books. The stuff was suitable for developing biological weapons. The bacillus anthracis is considered an insidious pathogenic agent in the arsenal of biological warfare.

The biologist immediately sounded the alarm. He informed the Defense Ministry about the offer which looked "a bit fishy" to him.

Yet nothing happened. The gentlemen at the Defense Ministry claimed that they were not competent—and did not show interest. In addition, the Bundeswehr does not have such weapons, he was told.

In a similarly perplexed and helpless way, German security forces are reacting to warnings and reports about the dangerous material that is currently appearing on the black market.

Through thousands of channels, businessmen, unemployed scientists, and blackmailers are currently trying to smuggle captured material from the former Soviet Union in portions into Germany. Foreign secret services, like the CIA and Israel's Mossad, have repeatedly warned their German colleagues against the stray bankrupt's assets from the East.

International weapons trade experts are also quite familiar with the problem. "The research laboratories are desperately trying to survive," Ulrich Albrecht from the Berlin Conflict Research Institute stated. In the Commonwealth of Independent States [CIS], "everybody is carrying out deals with everybody," and many dealers are seeking their fortune in the West."

Their arsenal includes everything that can kill people—from a new type of nerve gas to the old mustard gas from world War I, from nuclear warheads to bacilluses causing pestilence.

Dangerous quantities of caesium, cobalt, and uranium from eastern Europe were impounded by the customs investigators in Germany in the past few days. Radioactive material has been discovered in many places.

This year, the responsible official at the Federal Office of Criminal Investigation, Bernhard Ferchland, has registered "over 100 cases where dealers from the East claimed to possess nuclear material." The estimated number of unknown cases, however, is enormous because "only very few dealers tell us about their trade."

The police reacts in an "unexperienced, unskilled, and clumsy way" to the new danger, BKA head Hans-Ludwig Zachert complained. The police are not only lacking know-how, but also protective suits and transport containers.

Environment Minister Toepfer (Christian Democratic Union) has described the situations as "extraordinarily serious." "Dangerous substances" are vagabonding through the country and are no longer controllable. "This is a completely new situation," his Hesse counterpart Joschka Fischer stressed.

"In connection with nuclear power plants and the Hanau reprocessing plants we always talked only about averting dangers, about what might happen." And now the stuff is simply here—at the railway station and at the hotel."

The Greens minister witnessed the seizure of caesium and strontium in Frankfurt the week before last. The caesium-137 was hidden in a lead container in locker 579 at Frankfurt main railway station. The strontium-90 was discovered in the trunk of a BMW car with a Kattowitz license plate, which was parked in front of the Mondial hotel.

Three Poles apparently smuggled the radioactive material into Germany. "One could feel the people's fear. One cannot smell, see, or taste this horrible stuff," Fischer stressed.

The police had got on the track of the smugglers some time ago. At the office of the criminal police in Aalen in Baden-Wuerttemberg, a Pole appeared in the middle of September who wanted to organize the purchase of caesium, strontium, and 10 kg of uranium-235 for German authorities.

The security authorities were alarmed by the fact that the Pole mentioned casually that he could also procure a nuclear warhead from the CIS. Thus, the Baden-Wuerttemberg Criminal Office of Investigation used an undercover agent who pretended to be interested in buying nuclear material.

Since the main suspect Zbiginiew Fiutkowski lived in Wattenscheid, the Bochum public prosecutor took over the case. Telephone lines were tapped, an apartment in Kappel-Grafenhausen was searched, and a container with the radioactive caesium-137 was discovered.

On 9 October, Fiutkowski arranged a meeting with the undercover agent in Frankfurt, during which he offered 10 kg of uranium at $300,000. The material was supposed to be handed over in Karlsruhe-Ettlingen three days later, but a special squad of the criminal police arrested the suspects.

The criminal police was also successful in southern Germany. Investigators recently uncovered a comprehensive network of osmium smugglers who allegedly wanted to carry out deals involving over DM90 million. The osmium originates probably from the CIS states and is sought after as a catalyzer.

A group trying to sell 2.2 kg of uranium-235 was busted in Bavaria last Tuesday [13 October]. A special police unit confiscated the radioactive material at a parking lot in southeast Munich. The seven suspects were arrested.

The background to many numerous illegal deals is unclear. Investigators wonder why smugglers transport caesium and strontium that are not suitable for bombs to Germany. It seems totally unlikely that they really have access to bombs.

As far as the suppliers in the East are concerned, the authorities can merely speculate. We know that "members of the secret services" in the East and "senior military officials" supply most of the stuff.

There is no shortage of this material in the CIS states. Plutonium suitable for the production of weapons is stockpiled there, and tonnes of highly enriched uranium are being stored.

There is hardly any longer any control in the industrial sphere of the weapons-producing apparatus. The engineers designing ship reactors in St. Petersburg, for example, "are blessed with plutonium," researcher Albrecht stated. The bookkeeping department no longer registers losses, and the Vienna-based International Atomic Energy Agency only checks a single nuclear power plant in the vast nuclear state.

Germany is turning into a center of trade with radioactive materials, particularly because Germany is considered the capital of capitalism in the CIS states—where any kind of deals are possible.

Undercover agents and members of secret services have joined the scene, acting as buyers with considerable money. Experts of the criminal police fear that the activities of the dealers are only exercises for much larger deals. Some deals that have been uncovered so far might only be "test purchases," public prosecutors in Bonn suspect.

However, even the transport of small quantities may be deadly for the transporters. Krzysztof Adamski, 34, was exposed to a deadly dose of radiation when smuggling caesium in a tin can in his jacket.

Even rare substances have allegedly reached the market. According to secret services, west European dealers have even smuggled tritium from Russia into Germany. The gaseous substance used for bombs facilitates the boosting of atomic bombs and increases their explosive power considerably.

To boost a bomb, only the tiny quantity of two to three grams of tritium is required. The substance is currently traded at a street value of about DM60,000 per gram. This is a special offer for regimes with secret nuclear plans.

Red mercury is harmless but has a high street value. Numerous myths are centered around red mercury. There are people who claim that, as a "highly explosive substance" (TAGESZEITUNG), it is equally suitable for atomic bombs and for coating fighter planes.

The substance, which is mainly used to fill teeth, is being offered at DM500,000 per kg in the German weapons dealing scene. This is quite a high price for ordinary mercury oxide.

The German businesswoman Rita Draxler, who used to procure historical military equipment, is considered a

specialist for dubious deals with red mercury Europe-wide. The Bavarian Office of Criminal Investigation discovered that the blonde is being driven to meetings with customers in a black Porsche 911. She resided at the Ananas hotel in Vienna's fifth district several times and met business people there.

So far, the investigators have not found out the purpose of the deals. However, one thing is certain: A lot of money was involved.

Police Arrest Suspected Uranium-Traffickers

AU2910160092 Paris AFP in English 1530 GMT 29 Oct 92

[Excerpts] Munich, Germany, Oct 29 (AFP)—German police have arrested one German and two Croats during house searches aimed at dismantling a uranium-trafficking network, the Munich Public Prosecutor's Office announced Thursday.

The legal authorities suspect the men of belonging to a group at least 18-strong selling uranium-235 by the kilo, as well as 30 military tanks from former Soviet stocks, but Wednesday's search produced no trace of either uranium or weapons.

The German police, assisted by the Austrian and Swiss authorities, entered 33 homes in Bavaria, Baden-Wuertemberg, Hesse and in North Rhine-Westphalia.

One of the arrested men is a Croat pastor. [passage omitted]

Ten days ago, the discovery of 2.2 kg of slightly enriched contraband uranium, of a type used in nuclear power stations, led German Environment Minister Klaus Toepfer to recommend tighter controls to prevent such material being smuggled into Germany.

He added that eastern Europeans had to be made aware that there was no black market in the West for radioactive products. [passage omitted]

NORWAY

Impact of Rigid EC Environmental Policy Seen

93WN0031A Oslo AFTENPOSTEN in Norwegian 6 Oct 92 p 14

[Article by AFTENPOSTEN's environmental correspondent Ole Mathismoen: "Too Rigid Environmental Demands in the EC?"]

[Text] *Intensely rigid demands: Approved and planned environmental demands within the EC can be extremely harsh for Norwegian industry*

Environmental protection is being widely used as an argument against both the EEA [European Economic Area] treaty and EC membership. Norway will have to weaken environmental efforts, it is said. It is becoming steadily more difficult to use this argument if one compares regulations, efforts, and practice.

A great deal has happened in connection with EC environmental policy in the last couple of years. This pertains both to industry and to ordinary consumers. The recurring theme is a significant tightening up. Also outside, in international environmental negotiations, the EC has been a far greener negotiator than before. The EC's former environmental commissioner, Ripa de Meana, refrained from travelling to Rio in the summer because the agreements prepared for signing, in his view, were irresponsibly nonbinding. And the president himself, Jacques Delora, said dryly at his news conference in Rio: "This is something to build further on, but not much more."

Consumption Growth

Of course, there is still a long way to go before the EC centrally and the member countries have an environmental policy that is good enough. But what is interesting in this connection is the comparison with Norway. Right enough, the EC and the inner market are relying on consumption growth and, right enough, increased pollution accompanies this. But the prevailing political objectives in Norway are approximately the same. One of the finance minister's appeals to the people in order to get unemployment down is: Buy more, use more.

Hard for Norway

Parts of Norwegian industry have already noticed the results of the tightening up. Large companies like Hydro, Statoil, and Norske Skog are having big problems with local environmental protests, which are making deep inroads in government offices in both Germany and France. Many sense, besides, the contours of what the EEA and eventual membership will bring in terms of demands for very large environmental investments on Norwegian soil.

For those who have thoroughly studied the EC's environmental work in recent years, it seems illogical to use environmental protection as an argument against Norway becoming a part of the EEA. Actually, it is more logical to argue against the EEA because environmental demands will be too harsh for parts of Norwegian industry.

The treaty does not encompass management of the environment and, consequently, none of the EC's environmental protection directives will apply. In such a case, we would have even greater problems. Conifer forest protection, wildlife management, and whaling are catchwords that, without fail, will be compatible with the EC's environmental protection policy.

But the pollution aspect is affected to the very highest degree by the EEA agreement, because pollution is often a result of the production of goods. Antipollution measures cost money and can therefore affect the conditions of competition. Precisely on these grounds, the EC is

striving for uniform rules, and all who want to be a part of the inner market must follow these rules. Even if the Norwegian natural environment may tolerate greater pollution from sewage or industrial discharges than nature on the continent, it will be viewed as competitive weaseling if Norwegian businesses have weaker demands placed on them for cleaning up the environment than do businesses on the continent.

Best Technology

The following are examples of how Norwegian industry may be affected and subjected to significant expenditures:

—In Norway, emissions permits are issued following the so-called recipient principle. This means that the permit is weighed against what the environment around the individual concern can tolerate. An industrial concern or a municipality on the Oslo Fjord will, in general, have stricter demands placed upon it than will comparable ones in West Norway or in North Norway. Following strong pressure from Germany, the EC is in the process of adopting a different principle: Emission permits shall be set on the basis of the best technology available. Norwegian industry, as well, must gradually go along with this principle and this will doubtlessly entail significant investments.

- The EC's rules for drinking water quality are very strict. Great Britain has, among other things, been forced to make enormous investments in order to satisfy these demands, so that the food industry will not have problems in selling its products on the inner EC market. It is unclear for the moment how rapidly Norway must meet the demands, but significant investments are to be expected. In large parts of the country, the quality of drinking water is not good enough. It has already been determined that up to 80 percent of the equipment that will be necessary in such an investment of billions of kroner must be obtained abroad, principally in Germany.
- Several EC countries have already approved very rigid requirements for recycling. In Germany, requirements are being planned, for example, for use of 70-80 percent recycled materials in paper production. It is already clear that the Norwegian paper industry will not be able to meet such demands without importing large quantities of used paper. In the first round, Norway gets an exception. But gradually, as requirements for a high degree of recycled materials spread to new product groups, such as aluminum for example, Norwegian industry will also have to fulfill the demands.
- Requirements for being able to use the EC's environmental logo are in the process of being worked out. It is unclear how strict they will be, but in contrast to criteria for the Scandinavian logo, the degree of recycled materials and energy use will be decisive elements. To be sure, the Scandinavian logo can also be used within the EEA but it is doubtful that the Scandinavian white swan has any meaning in terms of environmentally friendly products penetrating the continent.

Reduced Oil Use

Norway and Norwegian industry will also be affected to a significant degree by other environmental trends within the EC. It has been agreed that the use of nonrenewable energy sources, like oil, will go down in order to reduce carbon dioxide emissions. The way stands clear for the implementation of plans to introduce environmental duties on carbon dioxide emissions. They are waiting, however, for the United States or Japan. Sooner or later the duty will come. And European industry has long since begun to prepare itself. In Germany, intensive efforts are underway to develop energy-saving technology and alternative energy sources. Reduced oil consumption in Europe will undoubtedly affect Norway.

Norwegian industry is in full swing with a significant investment program of its own in order to improve environmental standards. In practice, however, after all the outcry about environmental duties and targets, an environmental intermission has been declared in our country. For the time being, no politician dares to speak about tightening up environmental targets or introducing new remedies.

Short-Duration Rest Period

It can be a trap for Norwegian industry to believe that they have been rescued by, for example, reduced electricity fees [*el-avgifter*]. Most likely, this will be only a short-duration rest period. A very basic restructuring of energy use and technology will be necessary if Norwegian industry is to manage to survive in an inner EC market with strict environmental requirements and strict energy requirements. Evil tongues will have it that Norwegian industry continues to be at the stage where most of its energies are being used to halt environmental developments. Things are hardly so bad, but it is a fact that only a small part of our industry sees the environmental wind that is sweeping over Europe as a challenge and not as a threat. German, Japanese, French, and, in part, British industry are in the process of building up a technology that gradually will become the only alternative because, among other things, emission requirements are set on the basis of what this technology can achieve.

Environmental Audits

Within the EC, the pace is steadily accelerating. Besides the cited measures vis-a-vis industry, a whole succession of so-called market measures is in the wind. In addition to environmental fees, environmental audits are being introduced in industrial concerns, products will be environmentally labeled in large number so as to allow general environmental standards, and compensation rules are being introduced that make polluters and waste handlers economically accountable for environmental and health damage.

Both industry and No to the EC take delight in familiarizing themselves thoroughly with what is happening on the environmental front within the EC.

It becomes a little pathetic when parts of the Norwegian environmental movement and No to the EC use environmental protection as an argument against the EEA treaty. But, indeed, this is seldom based on detailed knowledge of anything other than the strength-labeling of chemicals. Reports that show that the inner market will result in increased pollution serve as the principal justification. They are undoubtedly correct. But none of this pollution respects national borders and it will come to us irrespective of whether we are in or not. One of the EEA treaty's most important environmental contributions is that regional environmental collaboration in West Europe is strengthened.

SWEDEN

New Government Environmental Measures Detailed

93WN0020A Stockholm DAGENS NYHETER in Swedish 22 Sep 92 p 7

[Article by Erika Bjerstrom: "Crisis Measures Favor Environment"]

[Text] The environment came out the winner in the government's crisis package. Unemployed workers may be used in environmental cleanup work, such as cleaning sea and lake shores, with no loss in jobless benefits. In addition, plans were drawn to double the tax on sulfur and to introduce a new carbon dioxide tax.

The crisis package, which was prepared by the Bildt cabinet and the opposition leader, Carlsson, contains a green dimension. Aside from the implementation of environmental taxes and cleanup work, prices on leaded gasoline are increased by one krona per liter and unleaded gas prices are raised one-half krona per liter. Thus the more environmentally hazardous gasoline is "punished."

Unemployed workers will retain their benefits while they perform work for the environment and nature, for cultural institutions, and for businesses. The proposal, which is called Employment Development, is part of the unemployment program and involves 20,000 unemployed workers.

Rolf Annerberg, Director General for the Swedish Environment Protection Board, was pleased with the news. Last August he sent an 11-page wish list to the Ministry of the Environment. The list is a compilation of all urgently needed nature and environmental projects in Sweden.

"These are labor-intensive projects, the total cost of which is 200 million kronor. We have not had a single ore to allocate to these projects," said Rolf Annerberg.

The projects include everything from repairs of summer and winter roads at the Swedish borders, to renovation of buildings and footbridges, as well as the clearing of brush in nature reserves. The care of nature reserves has been a major problem for the provincial governments ever since the use of unemployed workers became impossible.

Now the provincial governments, through the Environment Protection Board, may express their wishes for where the unemployed can be deployed.

"We suggest, on a national level, that unemployed workers be used for beach cleanup work, as well as oil spills," Olof Johansson told us.

Businesses and automobile drivers will be hit by increased environmental taxes, which will bring another 5.5 billion kronor to the government coffers. Gasoline taxes will bring in the bulk of this revenue, or 3.5 billion kronor.

Not Over Yet

But final agreement is yet to be reached on environmental taxes.

"The Social Democrats were not ready to negotiate, they asked for an opportunity to come back after they consulted with their experts," noted Olof Johansson.

The government wants to increase two environmental taxes and introduce a new one:

- The sulfur tax is doubled from 30 kronor per kg of sulfur emissions to 60 kronor. It is estimated this will add 250 million kronor in tax revenues.
- The general carbon dioxide tax, which today is eight ore per kg for industries and 32 ore for households, can also be increased in order to reach the goal of 5.5 billion kronor in increased revenues.
- A new carbon dioxide tax has been introduced, covering all oil and coal-based power production. The tax will amount to eight ore per kg of carbon dioxide. The proposal was made last week by the Biofuel Commission, but has been submitted for further consideration by the parties involved.

"But we feel it is a good proposal and we would like to see it pass now," said Olof Johansson. He was quick to add that the tax corresponds to decisions made by the EC Commission.

Differentiated Tax

Gasoline taxes are increased, but become differentiated, meaning different fees for different kinds of gasoline.

"We have increased the differentiation between leaded and unleaded gasoline by 200 percent. The message is clear, we quickly want to get rid of cars powered by leaded gas. There is significant support among the general public for this type of development," said Olof Johansson.

He also disclosed that higher diesel fuel prices may also be implemented, in order to prevent diesel prices from dipping below prices for leaded gasoline.

Rolf Annerberg also welcomes the news concerning higher gasoline prices.

"The last time gasoline taxes were increased, traffic to and from Stockholm decreased by 6 percent. The more expensive gasoline becomes, the easier it is to coax drivers to use mass transportation."

Clear-Cutting Ban Made Permanent

93WN0020B Stockholm DAGENS NYHETER in Swedish 22 Sep 92 p 5

[Article by Soren Lofvenhaft: "Clear-Cutting Limited"]

[Text] The Swedish Forest Service has clear-cut its last virgin forest bordering the Swedish fells.

Last year's decision to implement a temporary ban on logging has now been made permanent.

This means that approximately 80,000 more hectares of virgin forest, bordering on fell areas, has been granted future protection.

The Swedish State Forest Company administers a total of 800,000 hectares of forest in the conifer belt, below the fell chain. This belt is defined as forest bordering the fells.

In connection with the environmental battles of recent years, approximately three-fourths of these forests have been exempted from cutting, or are unsuitable for large-scale logging.

What is happening today is that an ecological borderline has been drawn through the still-unprotected areas. According to the new policy adopted by the Forest Service, this will save "all forests which have not been affected at all, or have been affected to a limited extent, by earlier logging operations," in other words, forest areas enjoying long-term continuity and which are most valuable for the preservation of endangered plant and animal species.

The State Forest Company emphasizes that the decision will have a negative effect on employment in inland districts, but that it is justified due to the great importance of the forest bordering the fells, in the endeavor to preserve biological diversity in Swedish forests.

In forests bordering the fells, logging will continue, if the forests have previously been heavily logged.

Last year's logging ban was implemented after threats of boycotts against Swedish forestry products were made by environmental organizations abroad.

Whether the privately owned forestry companies, Stora, Modo, SCA and Korsns, which last year stopped clear-cutting in forests bordering the fells, are going to follow suit with the Forest Service and implement a permanent tree-cutting ban, remains to be seen.

Forest, Pulp Sectors Adapt to Environment Demands

93WN0020C Stockholm DAGENS NYHETER in Swedish 26 Sep 92 p 3

[Article by Lars-Ingmar Karlsson: "New Demands on Swedish Forest"]

[Text] The demand by consumers for chlorine-free paper puts new demands on both forest and industry. If the paper is to be white without the use of chlorine, the logs cannot be brown from rot when they arrive at the mill gates. But the industry cannot refuse to accept all logs damaged by rot, for which reason some innovative thinking is required.

In the large mill yard in Morrum, one can see rows and rows of woodpiles. Sturdy butt logs are mixed with spindly fir tops. Some logs exhibit a nice light yellow color in the autumn sunshine while others are of a dull brown color, and some even have hollow ends.

Ingemar Alfredsson works as a process engineer for Sodra Cell's sulfate industry in Morrum. He views the woodpile with suspicion.

"I really don't know if this will produce good pulp," he said.

But it must. The forest owners who deliver the raw material to Morrum's sulfate industry also own the company. Quite naturally, they want to be paid for the forest they themselves, as well as earlier generations, have expended so much effort in cultivating.

There is still time to find solutions for the problem of logs damaged by rot. Sodra Cell in Morrum produces only a minor share of chlorine-free pulp, and is therefore able to accept a large number of brown logs. But major changes are in the works.

"The interest in chlorine-free pulp is increasing all the time. We should be able to switch to totally chlorine-free production within two or three years, if the market demands it," said Hans Burmeister, marketing manager for Sodra Cell.

His promise is quite controversial. During the last few years, the pulp industry has been hard at work trying to replace chlorine as a bleaching agent. Most plants have now abandoned the most environmentally hazardous form of chlorine, or chlorine gas. But to manage totally without chlorine is not within reach for the industry.

"It will cost a few hundred million kronor per plant. I am quite convinced that soon we only will sell chlorine-free pulp from our plants in Morrum, Varo, and Monsteras," asserted Hans Burmeister.

Although the forestry industry, like all other industries, suffers from the recession, we were met by a belief in the future at Sodra Cell in Morrum.

Requirements for good raw materials are becoming more stringent and new processes are being developed. Thus factories can avoid releasing large amounts of chlorine-polluted wastewater, which poisons plants and animals, into rivers, lakes, and the sea.

"In the future, we are going to produce a larger variety of different quality pulp than we do today. Customer requirements will play a greater role than today," explained Ulla Jansson, process developer for Sodra Cell.

In order for the pulp industry to succeed in this, they would prefer not to receive the most rot-damaged logs. Forest owners have already felt the effects of the higher quality requirements, which have resulted in lower prices. Therefore, in the future, they will be forced both to care for their forests more effectively and to exhibit greater care in logging. But this does not provide a short-term solution for the pulp industry's need for better wood.

"We can handle this many ways. One solution is to sort the logs more thoroughly and use the right wood quality for the right pulp quality. Another option is changing the processes in order to be able to better utilize the brown wood," said Ulla Jansson.

All this is being worked on now. At the same time, transportation from the forest to the mill is becoming faster. Pulp wood is a fresh commodity, and it is preferable that it gets to the chip digesters within a month of the tree cutting.

Sodra Cell's belief in chlorine-free pulp and conformity to detailed customer quality specifications is not entirely shared by the other large forestry groups.

As Per Botelsson, technical manager for Modo Paper, expressed it: "Our view is that the most important step is not to get away from chlorine bleaching. We can protect the environment just as well by making the processes completely closed, so that no chlorine is released from the plant."

Proliferation of Small Power Plants Decried

93WN0020D Stockholm SVENSKA DAGBLADET in Swedish 27 Sep 92 p 7

[Article by Hans Strandberg: "Private Energy Damages Environment"]

[Text] An extreme privatization of Sweden's power companies increases the risk of damaging the environment and exacerbates resource waste. It could also make municipal and rural districts more vulnerable. This according to a group of researchers with the Research Institute of the Swedish National Defense, in a newly published report.

The study, titled "Electrical Energy Production to the Local Districts," was commissioned by Nutek, the National Board of Industry and Technology Development (FOA). It discusses energy not only in a Swedish future of deregulation on competition, but also from a global perspective where the shibboleth is "sustainable development."

"Here the local districts play an important role because it is important to develop an energy system which is more adaptable to the environment, and because the new technology must spring from local conditions and requirements," said Peter Steen, research director with FOA.

Cooperation Important

The conclusion is therefore that the local districts' competency in the field must be improved, that they must cooperate in introducing new technology and that the politicians must maintain their influence over the power companies.

"Increased competition can increase efficiency within the energy sector and shorten the decision paths, but I think it would be dangerous to privatize without some thought and expect energy to be sold like ice cream," noted Peter Steen.

Therefore he points to some major risks, such as negative environmental effects and resource management, and increased vulnerability.

"From the very beginning, a power company owned by local authorities can set as its goals environmental and operational safety (less vulnerability). A privately owned company is more inclined to start off counting money to ensure high profits," he continued.

Peter Steen also noted that it is important for society as a whole to influence the process, in order to arrive at sound overall solutions. It makes it difficult if different principals administer areas which belong together, such as, for instance, energy and waste.

"Yes, there is a risk of poor planning and management; that we either get too much of a bad thing, such as damage to the environment, or too little of something good, such as new technology."

More Active Role

The report delineates a future mix of public and private, and emphasizes that local districts must play a more active part and change their modi operandi.

One example is that power companies to a greater extent develop into energy service companies. Instead of providing only oil or electricity, the companies will also sell heating systems and lighting, respectively.

"If the power company takes care of more stages, interest in limiting wastefulness will increase. In addition, it is often cheaper to increase efficiency than to expand. To

thus make the customer more dependent is also a weapon in a more competitive marketplace," explained Peter Steen.

SWITZERLAND

Company Invents Easily Recyclable Plastic

92WS0774B Stuttgart BILD DER WISSENSCHAFT in German Aug 92 pp 94-95

[Article by Burghard Boendel: "Here Today, but Not Gone Tomorrow"]

[Text] **It is a fountain of youth for used plastics. A Swiss chemical company intends to get control of its plastic waste with aqueous solutions. With the new process, polymers can then be recombined into a high quality plastic.**

Roland Belz could not let go of the idea with the sugar cube. The little object, according to the flash of inspiration of the inventive businessman, sparkles with an excellent recycling property. It is possible to transform a dirty sugar cube into a clean one without any problems: Simply dissolve it in water, purify it, dry it, and reshape it. Belz thought it should be possible to recycle plastic using this same principle.

Ten years have passed since this observation. First with the Battelle Institute and finally in his own company, Belland AG, with headquarters in Biberist near Solothurn in Switzerland, Belz worked on a technique based on this notion which is now ready for application. It includes not merely a single, new material but a whole family with one common property: During polymerization, carboxyl groups (COOH) are docked on the primary chain.

Whereas the primary chain determines the properties of the plastic, the carboxyl group enables specific water solubility. Belz explains the chemistry: "COOH is smuggled in, so to speak, as a predetermined breaking point in the polymer."

When the newly developed plastics come into contact with aqueous caustic solutions such as soda lye (NaOH), the sodium is released from the lye, the hydrogen is displaced on the COOH group, and reacts with the radical to form COONa. As a result of this regrouping, the thermoplastic plastic becomes a polymer salt which dissolves in water. Here, the individual polymer chains which normally are firmly entwined in a ball and only slightly relaxed by warming for processing, swim freely side by side. Fortunately, health threatening monomers, i.e., the starting components of the polymer, are not formed.

With a second dip into the bag of tricks, the plastics are then recovered. If the basic polymer soup is neutralized, for example, with sulfuric acid (H_2SO_4), hydrogen displaces the sodium from the COONa compound so that the original condition is restored in the carboxyl group. Sodium and the remaining sulfate (SO_4) combine to form (Na_2SO_4), and the plastic precipitates. That is the functional principle: Belz will not divulge the specific lyes and acids: "That is our black box."

The dissolving and precipitation do no damage to the plastic: "This transformation can be repeated many times without changing the quality at all," Belz determined in countless series of tests.

Thus, the Belland process provides three basic advantages:

- While the plastic is in use, it does not differ from other polymers. It has a precise profile of properties.
- Sorting is automatic based on the dissolution property. From a dirty, mixed plastic cocktail, the lye dissolves out only Belland material, which is then available as a contaminant-free type.
- The plastic is purified down to the polymer chain. Any contamination which has worked its way in is eliminated. At the end of the recycling process, there is a hygienically problem-free material which can be used in any way. However, to make recycling simple and economical, the actual palette of plastics is designed according to the modular principle. The foundations for this are three basic polymers:—An acrylate copolymer with a rubberlike, soft consistency,—A styrol acrylate copolymer for hardness and temperature resistance,—An adhesive component.

All products made of Belland plastics such as films, coatings, injection molded parts, fibers, or adhesives are composed of these three components. For each product the applications engineers specify the exact mixture of the individual components to provide the required set of properties.

This requires great precision. Because the plastics of the Belland trademark do not have the broad spectrum of properties that the standard polymers polypropylene and polyethylene have. The reason for this is the carboxyl groups. They make the material brittle and amorphous. "Consequently, we have to know whether the material is to go to the refrigerator sector or to end up as a swizzle stick for coffee," says Belz.

The composition is defined based on the intended use. A bubble pack such as that used for tablets consists of 10 percent styrol acrylate, 88 percent acrylate, and 2 percent adhesive. Consequently, according to Belz, marketing and applications engineering cooperate very closely.

The first recycling step occurs at the plastics sorting facility: From there the filtered mixture, in which only water soluble impurities are still found, moves in tank cars to the central recycling facility. This is currently being built on grounds of the BUNA AG in Schkopau, Sachsen stop. The polymer precipitation performed there is preceded by water purification, which begins with fine filtration, passes through the anaerobic stage, and ends with sterilization.

The only problem after that is that the three basic polymers precipitate out together. "Of course, we could separate the three basic components by technical means," says Belland manager Belz. However, that would be extremely expensive and illogical, since they have to be remixed later anyway.

Consequently, they take a different tack. New product is used to adjust the ratio of the basic polymers as well as their molecular weight required for the specific application. In a process not disclosed by Belz, old and new plastic are combined and precipitated together. "Thus we obtain an extremely homogeneous material," boasts Belz. With compounding, i.e., mixing of melts, this would not be possible.

Currently, the Belland people are working on refinements and on the construction of the production and recycling structure. Recently, the necessary additives have also arrived in the loop. The remaining brine is run through an electrolysis-like process for separation into acids and bases. The acid is then reused for plastic precipitation in the recycling facility; the clean caustic solution returns in the tank cars to the sorting operation to dissolve the Belland plastics there.

Such solid arguments will be needed by Belz to find additional business partners. Thus far, at prices of about 5 German marks [DM] per kilo, the Belland material has been not only significantly more expensive than standard plastics. The recycling is also not currently calculated in. However, cost-effectiveness is only a matter of time for Belz. In 1993 BUNA—currently the only raw material supplier—is supposed to deliver at least 30,000 metric tons of new material. Ten thousand metric tons are supposed to be added from the recycling facility. If all goes as planned, the economic break-even point should be reached by the end of the year. After acquiring a market share of 10 percent, i.e., approximately 40,000 metric tons per year, Belz believes he will be able to inspire fear in the competition in Germany.

To boost business, the managers of the Swiss company are currently on a tour of Germany with presentations primarily with plastics processors.

It is a good thing for them that there is virtually no change for the producers of plastic packaging. The Belland material is just as easy to process with conventional injection molding machines and with automatic film and deep drawing machines. The uniqueness of the Belland technique, summarizes Belz, does not lie in a revolutionary invention but in a new consciousness: "We have simply turned production around."

UNITED KINGDOM

Tougher Standards for Nuclear Power Plants

93WN0085A London THE DAILY TELEGRAPH in English 6 Oct 92 p 4

[Article by Christine McGourty]

[Text] The operators of future nuclear power stations will have to meet tighter safety requirements published yesterday by the Health and Safety Executive, which regulates the nuclear industry.

The risk of death to the public should be no greater than one in 100,000 a year, it said. Until now, a risk of one in 10,000 was acceptable.

The old standard was equivalent to the average annual risk of dying in a traffic accident and significantly lower than the chance of contracting fatal cancer, an average of one in 300.

Its successor is equivalent to the risk of death in an accident at work in the safest sectors of industry. But Dr Sam Harbison, the executive's chief inspector of nuclear installations, said that: in practice, even higher levels of safety would be demanded.

The standard was first proposed by Mr Michael Barnes, QC, who led the inquiry into the application to build a station at Hinkley Point.

The standard will not apply to existing stations. Mr John Rimington, director general, said it was impossible to quantify the risks from ageing Magnox plants but they were "robust."

Dr Harbison said it would not be difficult for new power stations to meet the standard but it might be impossible for old ones. However, the Bradwell plant in Essex, closed in March at the end of its 30-year life, did meet the new standard, he said. In August, the executive gave Nuclear Electric the go-ahead to resume operating the plant.

The report was published to provide more rational public discussion about the risks of nuclear power, said Mr Rimington. A decision would need to be made soon on whether to build more nuclear plants in the next century.

In 1989, the Government imposed a moratorium on building reactors after its failure to privatise nuclear power along with the rest of the electricity supply industry. This ban may be lifted if the industry secures a favourable outcome from the Government review of nuclear economics in 1994.

"Sooner or later we've got to make up our minds whether we'd rather have nuclear power or go on spewing out the effects of fossil fuel combustion," said Mr Rimington. "We've got [to] have some rational basis for making a decision."

Dr Harbison said: "We need a method of comparing the risks of nuclear power against those from fossil fuel-generated power."

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